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**Pediatric Critical Care:
Liver Transplantation**

JANUARY 1989

VOL. 82

NO. 1

INDIANA MEDICINE

The Journal of the Indiana State Medical Association

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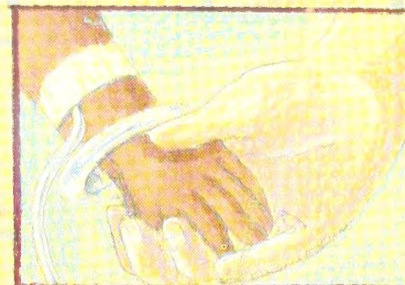
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Vol. 82, No. 1
JANUARY 1989

Devoted to the interests of the medical profession and public health in Indiana since 1908.

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**ABOUT THE COVER**

"Liver Transplantation" is the title of this month's Pediatric Critical Care article. The authors say experience gained in the area of liver transplantation not only benefits liver transplant patients but also extends to other areas of clinical medicine. — COVER BY BRENDA KESTER, MEDICAL MEDIA PRODUCTIONS, METHODIST HOSPITAL OF INDIANA

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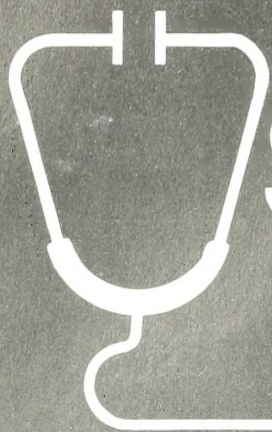
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STETHOSCOPE

EXAMINING STATE & NATIONAL MEDICAL ISSUES

The AMA supports the Harvard resource-based relative value scale (RBRVS) as a mechanism for a Medicare national fee schedule. However, members of the AMA House of Delegates at the Interim Meeting approved a list of changes that should be made in the RVS before it is implemented.

Concern still exists over how long a transition period will be necessary to implement a national fee schedule based on RBRVS and how soon the transition will begin. The AMA has also called for refinement of the Harvard study to better measure practice and training costs, geographic and specialty differentials and coding for office visits. Report AA, which was accepted by the AMA House, also supports expanding the RBRVS to include more specialties.

The AMA recommendations said the RBRVS should not be used to force mandatory assignment on physicians.

Medicare is expected to be a target for cost reductions in President Reagan's 1989 budget proposal. Approximately \$15 billion of the needed \$35 billion in total budget cuts for the deficit reduction will occur in cutbacks in government benefits programs. The budget was scheduled to go to Congress in early January. President-elect Bush may revise the plan, but is not expected to make changes in the planned Medicare cuts.

HHS recently released figures showing that the 1987 health care bill was 11.1 percent of the GNP. Per capita health expense was \$1,987. (Fiscal year 1987 is a 9.8 percent increase over FY 1986.)

The AMA has available a new booklet, "HIV Blood Test Counseling: Physician Guidelines." The cost is \$2 per copy with a minimum order of five booklets. Order from the AMA Division of Health Sciences, 535 N. Dearborn, Chicago, IL 60610.

A two-part videocassette and teacher's guide have been prepared by the AMA and General Motors as part of their collaboration to promote wider use of safety belts. "Safety Belts: For Dummies or People" is designed for youngsters ages 6 to 8. "The Game of Your Life" is targeted toward junior high students and demonstrates the effects of alcohol consumption on driving abilities. This video project kit has been mailed to 93,000 schools.

ISMA will receive a sample kit that will be available to member physicians. To order your own kit from the AMA, contact Jane Coughlin, AMA Department of Consulting Services, (312) 645-4419.

IN INDIANA...

The ISMA, the Indiana Section of the American College of Obstetricians and Gynecologists and the Indiana Chapter of the American Academy of Pediatrics have embarked on a campaign to seek increased funding for prenatal care in Indiana. They want Medicaid funding increased to include women and infants whose families have incomes up to 150 percent of the federal poverty level.

The campaign stems from Indiana's high infant death rate and the state's low funding of prenatal care through the SOBRA option. SOBRA (the Sixth Omnibus Budget Reconciliation Act) permitted states to expand Medicaid funding for pregnant women and their infants in families whose incomes are at or below 185 percent of the federal poverty level.

In 1988, Indiana opted into the program at only 50 percent of the federal poverty level (\$4,650 annual income for a family of three).

Indiana's infant mortality rate is 11.2 per 1,000 live births. A report issued by the Institute of Medicine showed that every \$1 spent on prenatal care saved \$3.38 in medical care for low birthweight or at-risk babies. A Blue Cross/Blue Shield study showed that a low birthweight baby costs the Medicaid program on the average of \$15,000 during its first year of life.

ISMA President Fred Dahling, M.D., William Graham, M.D., and Philip N. Eskew, M.D., representing ACOG, and Virginia Wagner, M.D., of IAAP, participated in editorial board visits at newspapers in Indianapolis or Fort Wayne on Dec. 20 to bring attention to the prenatal care funding issue.

Blue Cross/Blue Shield has set back its Dec. 22 deadline to Feb. 1, 1989, for signing Network Physician agreements. While that deadline applies to those physicians who wish to be included in the physician directory, the Blues indicate doctors may be accepted into the program throughout the year. ISMA mailed a memo to all members in mid-December to clarify the major differences in the three Network Physician agreements and to urge physicians to discuss the pros and cons of the contracts with their legal and financial advisers. If you did not receive the mailing, contact Ron Dyer or Tina Dillard at ISMA, (317) 925-7545 or 1-800-382-1721.

The Medicare Assistance Program (MAP) continues in Montgomery County. More than 80 persons have been certified in the program, which seeks to make certain that low income elderly have access to medical care. Under the program, physicians voluntarily agree to accept what Medicare pays for those persons who present a MAP card when they seek treatment.

Applicants must meet income guidelines of \$8,655 if single, or \$11,595 a year combined income, if married. Volunteers from senior citizen groups in Montgomery County certify and provide identification cards to those applicants who qualify.

MEDICAL MUSEUM NOTES

CHARLES A. BONSETT, M.D., Indianapolis



IF INDIANA WEATHER is following its usual pattern, then the temperature outside when the reader receives this issue of INDIANA MEDICINE should be cold—a good time to read an interesting letter of reminiscence from Dr. Kenneth Kohlstaedt. The letter should have a warming effect.

Dr. Kohlstaedt, former vice-president of clinical research for Eli Lilly Co., is retired and living in Palm Springs, Calif. His letter arrived last July when we were experiencing a heat wave and a drought.

"Dear Charlie,

As I read the enclosed article (regarding the use of genetic probes in muscular dystrophy) from that great medical journal—*The Wall Street Journal*—I am reminded of the research at Riley [Children's Hospital] on muscular dystrophy . . . The information contained in this article is far beyond my day in research (I began by perfusing the isolated tail of the dog—this led to discovery of angiotensin).

As I read between the lines, I surmised that this fundamental research could lead to a therapy for this horrible condition . . .

I have a suggestion—It would be interesting to compare the number of heat strokes that are occurring in the present heat wave with the record for 1936. The temperature in Indianapolis for more than 25 days was $+100^{\circ}\text{F}$ in 1936. We were receiving 10 to 15 cases of heat stroke each evening at the receiving ward of City Hospital. The mortality was high. [A] rectal temperature of 108° was common. Our treatment was ineffective. As I remember, mortality was $\pm 50\%$. In 1936, there was no air conditioning. Many of the patients had performed hard labor in the sun all day. They lived in very poor rooms, often on the second



Dr. Kenneth Kohlstaedt

floor of a building in near downtown. In this year of depression, diet was very poor. [There was] no salt intake.

This might be compared with 1988. Temperatures are about the same, but in 1988, nutrition by and large [was] much better, and air conditioning even in poor sections is fairly common. Also, treatment is far better: 1) the rooms in hospital are air-conditioned and 2) our knowledge of treatment is much better.

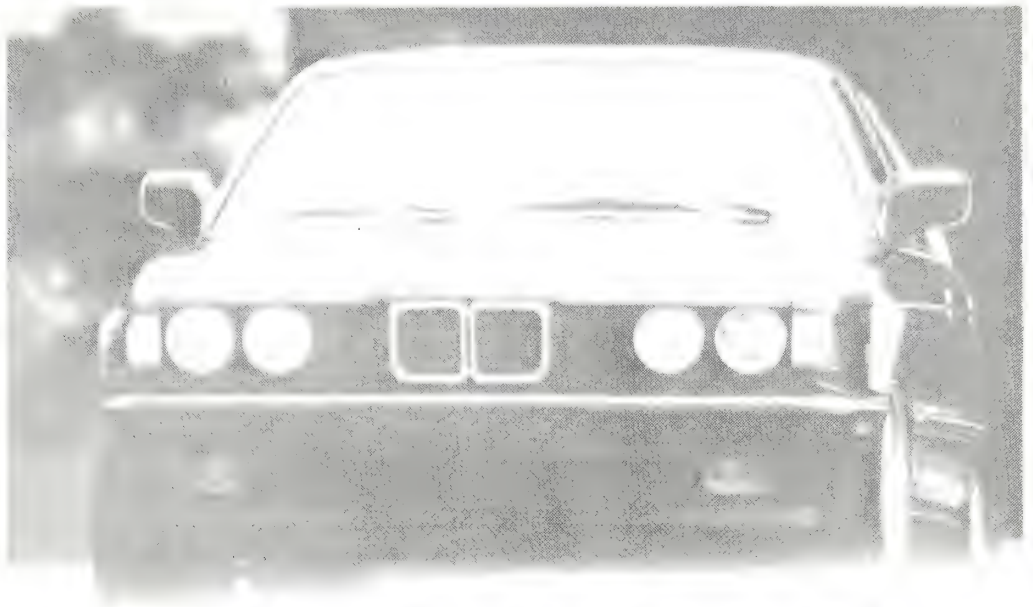
I have an interesting incident to recount. In September 1936, I received the results of treatment for heat stroke and heat exhaustion at a Friday night seminar at [the] medical school. During the height of our 'epidemic' of heat stroke, one evening we attempted to improvise some air conditioning. We obtained 300 lb. cakes of ice, placed them in tubs and had fans blowing over the ice. We used a large room of 8 beds on old Ward 1 in the basement of the administration building. We were

delighted with the cooling, but we forgot to control humidity. Our experiment was a failure, but when I reported this at the seminar we all agreed that a controlled environment was needed.

We had another problem at City Hospital. The surgeons were on the first floor. When operating at night, it was necessary to open windows during very hot weather. Many tiny bugs got through the screens. In January 1937, Eli Lilly installed air conditioning for the entire surgical suite. A huge air conditioning unit was placed in one of the anesthesia prep rooms. Obviously, here was a chance to test our idea of [the] effect of low temperature and low humidity in treatment of heat stroke. As medical director, I left [an] order that I was to be notified when a patient with heat stroke was diagnosed in the receiving ward. The weather was moderate until late June; then we had our first really hot day. At 1 p.m., the nurse called and said a patient with heat stroke was in the admitting room. I rushed down—it was a perfect case, temperature [of] 106° , stertous breathing, unconscious. We placed the patient in a surgical operating room. By 4 p.m., [the patient's] temperature [was] 98° , [and the] patient [was] awake. We were ready to write our paper. However, we decided to keep our patient in this cool environment for another 24 hours. As I recall, [the] next day about 2 p.m., I received a call from the nurse who was attending the patient. 'He has had another stroke. His temperature is 104° .' I rushed over and then we tumbled. Our patient had malaria. He was travelling on a gondola car on the Pennsylvania Railroad. He came from Arkansas. There went our Nobel Prize.

It was a lesson I have never forgotten . . ."

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WHAT'S NEW?

Medical Administration Publications has released *CPT Coding Made Easy*, the first technical reference to the American Medical Association's CPT book. The text teaches the reader how to avoid costly billing errors that result from misinterpretations of the procedures described in CPT. The text is \$49.95, including shipping and handling. To order a copy, write M.A.P., 671 Executive Drive, Willowbrook, Ill. 60521 or call (312) 654-1666 or 1-800-624-6994.

DataChem's newest blood warmer is even more efficient at heating fluids to body temperature for intravenous injection. FloTem IIe is a small, compact, lightweight solid state unit that uses dry heat instead of heated water. It provides uniform heat to a heating plate, which has special grooves built in to accommodate I.V. tubing carrying blood to the patient. Like its predecessors, FloTem IIe does not require disposable coils, cuffs or bags.

Lactaid Inc., which markets lactase enzymes and lactose-reduced foods, announced that its Patient Starter Kits are now available to all physicians. These kits include an information booklet on lactose intolerance and samples of Lactaid tablets and lactase drops. With this kit, lactose-intolerant patients can enjoy any milk or dairy food without gastric distress.

DataChem has introduced a blood analyzer system using bar-codes to automatically calibrate the analyzer. The system's bar codes are built into the chemical reagent kits that accompany the system. They also set the proper wavelength automatically; store the expiration date and lot number; retain all normal values and signals for abnormal values; test the calibration of the analyzer; provide an inventory of the number of tests left in kit; and initialize the system to new tests so the analyzer is never obsolete. The analyzer system can be used by physicians as their own in-house laboratories.

News of what is new in the medical supply industry is composed of abstracts from news releases by book publishers and manufacturers of pharmaceuticals, clinical laboratory supplies, instruments and surgical appliances. Each item is published as news and does not necessarily constitute an endorsement of a product or recommendation for its use by INDIANA MEDICINE or by the Indiana State Medical Association.

Tri-Jon, Inc. now manufactures The Protector™, a silicone device with a polyethylene one-way valve to be inserted into the mouth of a patient who receives cardiopulmonary resuscitation (CPR). The device protects the patient and the person providing CPR because it is sterilized with gamma radiation and packaged in sterile form. Its unique valve is capable of withstanding the pressure of the victim's clamping jaws. The Protector™ is registered with the Federal Drug Administration.

Hewlett-Packard has introduced enhanced ECG Workstation for personal-computer-based ECG management solution for the clinic, group practice or small hospital. The new product provides enhanced capabilities over the company's earlier HP 43610A at a reduced price. It offers many features of larger, more expensive ECG management systems, including storage, editing and automatic routing of ECG reports.

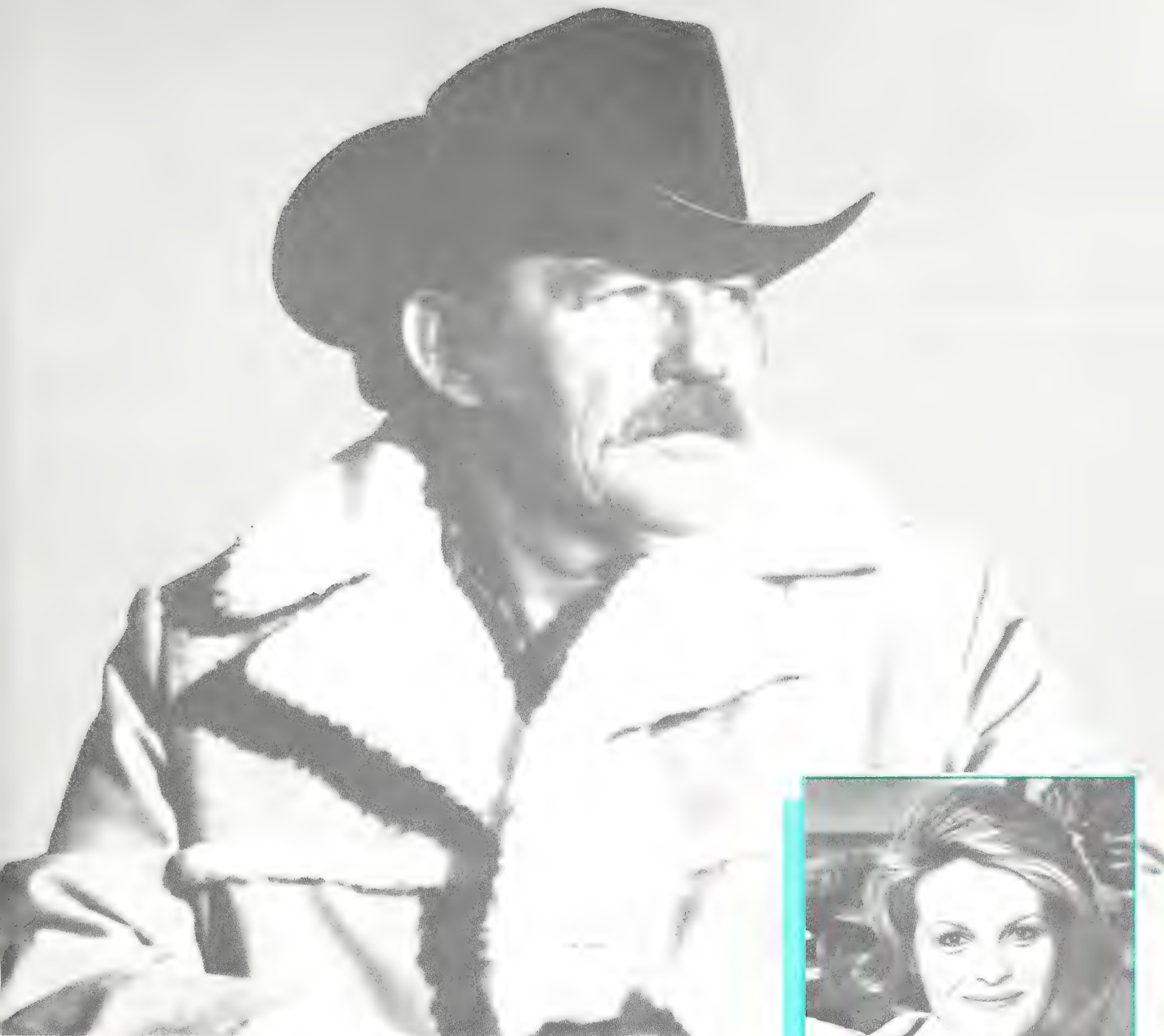
Hewlett-Packard Co. has released a self-guided electrocardiography course that covers a broad range of topics and includes a complete final exam. The course consists of a pre-test, an introduction to electrocardiography and sections on the anatomy and physiology of the heart. It also includes ECG techniques, a sample electrocardiographic record and adult and pediatric electrocardiography instructions. The price of "Electrocardiography: A Self-Guided Course for Technicians" is \$50. To order, call 1-800-225-0230.

Bristol-Myers Oncology Division has introduced a new 40-mg vial for its cancer chemotherapeutic agent, Mutamycin® (mitomycin). The new size augments the previously available line of 5-mg and 20-mg vials and provides greater dosing flexibility and convenience. Bristol-Myers Oncology Division is a part of the Bristol-Myers U.S. Pharmaceutical Group in Evansville, Ind.

Wampole Laboratories has released Crypto-LA® test, a rapid latex agglutination slide for the qualitative and quantitative determination of *Cryptococcus neoformans* antigen in serum and cerebrospinal fluid. This test is a convenient method providing clinical reliability without the delays of culture or the inconvenience of india ink methods.

Wampole Laboratories has introduced ONE-STEP hCG, a new one-step pregnancy test for urine or serum. The test device takes less than one minute to set up. It has no multiple reagents or time-dependent additions and requires no washing, pretreatment of sample or waiting between steps. A color change develops if hCG is present. Results may be read in five minutes for urine samples and seven minutes for serum samples.

The first medical office automation system to integrate an optical mark reading scanner with physicians' practice management software and micro-computer hardware is now available through Systems Plus, Inc., distributor of "The Medical Manager." Targeted at large group practices and clinics, the ADDSCAN Automated Medical Procedure Entry System essentially replaces the traditional data entry process with state-of-the-art bubble scanner technology, enabling users to potentially eliminate hours of data entry, increase data accuracy and streamline billing procedures.



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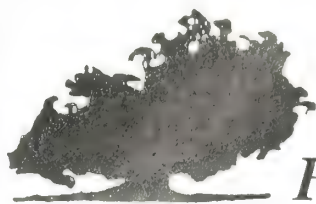
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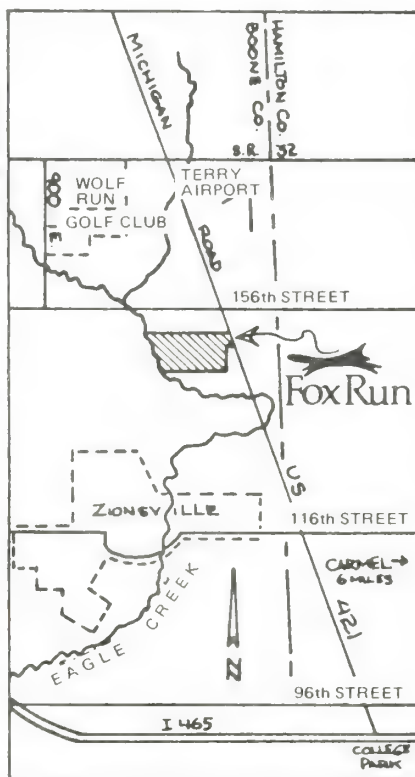
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BRIEF SUMMARY

CONTRAINDICATIONS

There are no known contraindications to the use of sucralfate

PRECAUTIONS

Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post-healing frequency or severity of duodenal ulceration.

Drug Interactions: Animal studies have shown that simultaneous administration of CARAFATE (sucralfate) with tetracycline, phenytoin, digoxin, or cimetidine will result in a statistically significant reduction in the bioavailability of these agents. The bioavailability of these agents may be restored simply by separating the administration of these agents from that of CARAFATE by two hours. This interaction appears to be nonsystemic in origin, presumably resulting from these agents being bound by CARAFATE in the gastrointestinal tract. The clinical significance of these animal studies is yet to be defined. However, because of the potential of CARAFATE to alter the absorption of some drugs from the gastrointestinal tract, the separate administration of CARAFATE from that of other agents should be considered when alterations in bioavailability are felt to be critical for concomitantly administered drugs.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Chronic oral toxicity studies of 24 months' duration were conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). There was no evidence of drug-related tumorigenicity. A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies were not conducted.

Pregnancy: Teratogenic effects. Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients treated with sucralfate, adverse effects were reported in 121 (4.7%).

Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

OVERDOSAGE

There is no experience in humans with overdosage. Acute oral toxicity studies in animals, however, using doses up to 12 gm/kg body weight, could not find a lethal dose. Risks associated with overdosage should, therefore, be minimal.

DOSAGE AND ADMINISTRATION

The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

While healing with sucralfate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination.

HOW SUPPLIED

CARAFATE (sucralfate) 1-gm tablets are supplied in bottles of 100 (NDC 0088-1712-47) and in Unit Dose Identification Paks of 100 (NDC 0088-1712-49). Light pink scored oblong tablets are embossed with CARAFATE on one side and 1712 bracketed by C's on the other. Issued 1/87

Reference:

1. Eliakim R, Ophir M, Rachmilewitz D. *J Clin Gastroenterol* 1987;9(4):395-399



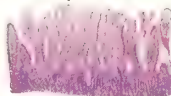
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Carafate® for the ulcer-prone NSAID patient

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250 mg
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think of it first

For respiratory tract infections due to susceptible strains of indicated organisms.

Summary.
Consult the package literature for prescribing information.

Indication: Lower respiratory infections, including pneumonia, caused by *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Streptococcus pyogenes* (group A β -hemolytic streptococci).

Contraindication: Known allergy to cephalosporins.

Warnings: CECILOR SHOULD BE ADMINISTERED CAUTIOUSLY TO PENICILLIN-SENSITIVE PATIENTS. PENICILLINS AND CEPHALOSPORINS SHOW PARTIAL CROSS ALLERGENICITY. POSSIBLE REACTIONS INCLUDE ANAPHYLAXIS.

Administer cautiously to allergic patients.
Pseudomembranous colitis has been reported with virtually all broad spectrum antibiotics. It must be considered in differential diagnosis of antibiotic-associated diarrhea. Colon flora is altered by broad-spectrum antibiotic treatment, possibly resulting in antibiotic-associated diarrhea.

Precautions

- Discontinue Cecilor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible organisms.
- Positive direct Coombs' tests have been reported during treatment with cephalosporins.
- Cecilor should be administered with caution in the presence of markedly impaired renal function. Although dosage adjustments in

moderate to severe renal impairment are usually not required, careful clinical observation and laboratory studies should be made.

- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.
- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Cecilor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions: (percentage of patients)

Therapy-related adverse reactions are uncommon. Those reported include:

- Gastrointestinal (mostly diarrhea) 25%
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, and serum-sickness-like reactions that have included erythema multiforme [rarely, Stevens-Johnson syndrome] and toxic epidermal necrolysis or the above skin manifestations accompanied by arthritis/arthritis, and frequently fever) 15%, usually subside within a few days after cessation of therapy. Serum-sickness-like reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Cecilor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
 - As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely.
 - Rarely, reversible hyperactivity, nervousness, insomnia, confusion, hypotonia, dizziness, and somnolence have been reported.
 - Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1%; and, rarely, thrombocytopenia.
- Abnormalities in laboratory results of uncertain etiology**
- Slight elevations in hepatic enzymes.
 - Transient fluctuations in leukocyte count (especially in infants and children).
 - Abnormal urinalysis, elevations in BUN or serum creatinine.
 - Positive direct Coombs' test.
 - False-positive tests for urinary glucose with Benedict's or Fehling's solution and Clintest[®] tablets but not with Tes-Tape[®] (glucose enzymatic test strip, Lilly).

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FUTURE FILE

Indiana University CME

The Indiana University School of Medicine will sponsor the following continuing medical education courses for January, February, March and April:

Jan. 26-28: Surgical Laser Use: Basics and Specifics, Indiana University School of Medicine, Indianapolis.

Feb. 9: Update in Infectious Diseases, University Place Executive Conference Center and Hotel, Indianapolis.

Feb. 17-18: Winter Meeting, Indiana Chapter, American College of Surgeons, Columbia Club, Indianapolis.

Feb. 20: Educational Programming and Options for Hearing-Impaired Children, University Place Executive Conference Center and Hotel, Indianapolis.

March 2: Infectious Diseases, Reid Memorial Hospital, Richmond, Ind.

March 15: Ob/Gyn Update, University Place Executive Conference Center and Hotel, Indianapolis.

March 17: Neurologic Update, University Place Executive Conference Center and Hotel, Indianapolis.

March 18-19: Annual Meeting, Indiana Society of Anesthesiologists and Anesthesia Update, University Place Executive Conference Center and Hotel, Indianapolis.

March 29: Dermatology Update for the Non-Dermatologist, University Place Executive Conference Center and Hotel, Indianapolis.

March 30-31: 1989 Symposium on Mammography and Breast Ultrasound, University Place Executive Conference Center and Hotel, Indianapolis.

April 10-14: Electrocardiographic Interpretation of Complex Arrhythmias: A Physiological Approach, Krannert Institute, I.U. Medical Center, Indianapolis.

April 19: Pulmonology Course, University Place Executive Conference Center and Hotel, Indianapolis.

April 20: Sports Medicine, Reid Memorial Hospital, Richmond, Ind.

For more information on these CME programs, call Melody Dian, assistant director, CME, (317) 274-8353.

The *Journal of the American Medical Association* publishes a list of CME courses for the United States twice yearly. The January listing features courses offered from March through August; the July listing features courses offered from September through February.

Emergency Medicine

The 10th Annual Mammoth Mountain Emergency Medicine Ski Conference will be March 5 to 10 at Mammoth Lakes, Calif. The conference is co-sponsored by the University of California, Irvine, and the Orange County Emergency Department Nurses Association. The cost of the conference is \$395 for physicians, \$225 for nurses and \$275 for physicians in training and physicians assistants. For more information, write Medical Conferences, Inc., P.O. Box 52-B, Newport Beach, Calif. 92662 or call (714) 650-4156.

Methodist Hospital CME

Feb. 22: Worker's Compensation Program for Physicians, Methodist Hospital, Indianapolis.

March 10-12: 5th Annual Symposium on SWL: Urinary and Biliary, Westin Hotel, Indianapolis.

For information, call Dixie Estridge, CME coordinator, Methodist Hospital of Indiana, (317) 929-3733.

Evansville Seminars

St. Mary's Medical Center in Evansville will sponsor the following CME seminars:

Feb. 9: Psycho-Cardiology Seminar.

March 9: The MacKenzie Seminar — A Woman's Response.

April 6: The Geriatric Seminar — Social Issues in Geriatric Care.

All seminars will be in the amphitheatre of St. Mary's Medical Center.

For more information, write to Continuing Medical Education, St. Mary's Medical Center, 3700 Washington Ave., Evansville, Ind. 47750 or call (812) 479-4468.

Nutrition in Health

"Nutrition in Health — The Scientific Challenge for the 21st Century" is the theme for the XIIth International Conference on Preventive and Social Medicine sponsored by the International Federation for Preventive and Social Medicine. The conference will be Aug. 13 to 16 in Montreal, Canada. For complete details, write The Columbia/Keness Team, 1010 St. Catherine St. West, Suite 645, Montreal, Quebec, Canada, H3B 1G7, or phone (514) 874-1833.

University of Michigan CME

The Office of Continuing Medical Education of the University of Michigan Medical School is sponsoring a course titled "Advances in Computed Tomography and Magnetic Resonance Imaging." The course will be April 26 to 28 at Towsley Center in Ann Arbor, Mich. Participants will receive 22 credit hours in Category I of the Physicians Recognition Award of the American Medical Association. For more information, contact Betty Phillips, Office of CME, Towsley Center, Box 0201, Ann Arbor, Mich. 48109-0201 — (313) 763-1400.

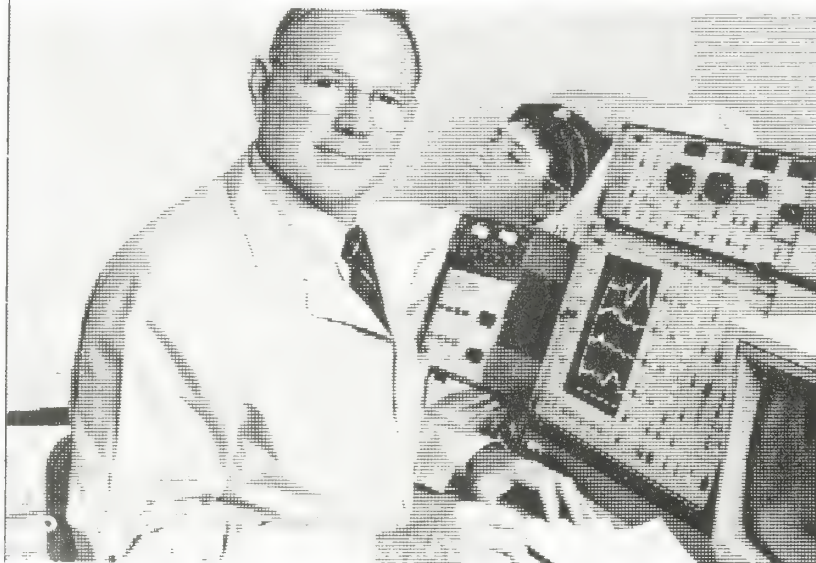


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To obtain Category 1 credit for this month's article, complete the quiz on page 70.



Persistent Pulmonary Hypertension of the Newborn

ELIZABETH A. PETERS, M.D.
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PERSISTENT PULMONARY hypertension of the newborn, or persistent fetal circulation, is a condition that complicates a variety of acute respiratory ailments in near term and term neonates. Following meconium or amniotic fluid aspiration, perinatal depression, sepsis, hyaline membrane disease or diaphragmatic hernia, pulmonary vascular resistance may remain or become elevated after birth. High pulmonary resistance causes pathologic right-to-left shunting at the level of the foramen ovale and ductus arteriosus; clinically, this may result in hypoxia, acidosis and/or cyanosis in the newborn.

Transitional Circulation

The blood returning to the fetus through the umbilical vein is responsible for supplying the oxygen needs of the fetus (the partial pressure of oxygen is approximately 30 torr).¹ Fif-

ty percent of this relatively well-oxygenated blood bypasses the liver and is shunted through the ductus venosus into the thoracic inferior vena cava. Nearly half of the inferior vena caval blood flow passes through the foramen ovale into the left heart, and subsequently the right arm and head, such that the brain receives the most well-oxygenated blood within the fetus. The remainder of the blood from the inferior vena cava mixes with the poorly oxygenated blood returning from the superior vena cava and flows into the right ventricle and the pulmonary artery. The majority of blood, 85% to 95%, flowing into the pulmonary artery passes through the ductus arteriosus and into the descending aorta. A small amount, 5% to 9%, perfuses the pulmonary vascular bed. This blood flow pattern results in the poorly oxygenated blood perfusing the body parts below the level of the ductus

arteriosus. The principal factors maintaining this fetal blood flow pattern are the high fetal pulmonary vascular resistance and the low resistance placenta.

When the fetus is born, the blood flow pattern makes a transition to postnatal distribution. The low resistance placenta is removed from the circulation, and mechanical distention of the pulmonary vessels occurs with breathing. The resulting decrease in pulmonary vascular resistance coincident with an increase in systemic vascular resistance causes a rise in blood flow through the pulmonary vascular bed, allowing the lungs to begin gas exchange. With alveolar ventilation and increased oxygen content within formerly atelectatic alveolar sacs, pulmonary vascular resistance drops further. With these changes in pulmonary and systemic vascular resistance and increased oxygenation, the foramen ovale and ductus arteriosus close. The pulmonary vascular resistance falls most dramatically in the first few minutes of life as the newborn adjusts to the extrauterine environment. Pulmonary vascular resistance continues to decrease rapidly over the next 24 hours and then gradually declines to adult levels by 4 weeks of age.²

Pathophysiology

In an infant with persistent pulmonary hypertension, the expected fall in pulmonary vascular resistance either fails to occur or the resistance rises again after the first few hours of life. When this occurs, the neonatal circulation may revert to a more fetal-like circulation. Blood flow to the lungs is reduced and a large fraction of poorly oxygenated venous blood is shunted through the foramen ovale and/or ductus arteriosus into the systemic circulation. The mixing of poorly oxygenated venous blood with the oxygenated blood that has passed through the lungs occurs either within the heart or distal to the ductus arteriosus, resulting in desaturated blood perfus-

TABLE 1 Neonatal Diseases and Stress Factors Associated with PPHN	
Perinatal stress	Hypoxia
Meconium aspiration	Hypothermia
Amniotic fluid aspiration	Acidosis
Bacterial pneumonia	Hypotension
Sepsis	Anemia
Congenital diaphragmatic hernia	Hypoglycemia
Pneumothorax	Hypocalcemia
Respiratory distress syndrome	Hyperviscosity
Transient tachypnea of the newborn	Prenatal exposure to prostaglandin synthetase inhibitors
Transposition of the great vessels	

ing the body. If the lungs are injured, oxygenation may be impaired so that the oxygen saturation of blood in the left side of the heart and systemic circulation is reduced. Reversion to a fetal circulation pattern may further reduce the oxygen saturation of systemic blood in neonates suffering from acute lung injury, causing the neonate to become increasingly hypoxicemic, acidotic and cyanotic.

The pulmonary vasculature is a dynamic system. Pulmonary vascular tone can be influenced by many factors, including alveolar ventilation, oxygen tension, carbon dioxide tension, pH and metabolites of arachidonic acid (prostaglandin, thromboxanes and leukotrienes).^{1,2} An infant can demonstrate rapid changes in pulmonary vascular resistance in response to an alteration in the balance of any of these factors. This may be seen clinically in the delivery room when an infant is cyanotic from mid-chest down to his feet, and yet is pink in the head, right arm and upper right chest. Pulmonary vascular resistance has not yet decreased and this skin pattern is indicative of right-to-left shunting across the ductus arteriosus. With development of a regular respiratory effort and supplemental oxygen, these infants usually respond with improve-

ment in color and, presumably, a decrease in pulmonary vascular tone. If the neonate experiences an acute lung injury (*Table 1*), resulting hypoxemia, hypercarbia, acidosis and failure to initiate adequate alveolar ventilation may result in persistent or subsequent elevation in pulmonary vascular resistance. The production of pulmonary prostacyclin, a pulmonary vasodilator and putative mediator of pulmonary vascular vasodilation, may not be normally induced, and the mediators of pulmonary vascular vasoconstriction (i.e., hypoxemia, vasoconstrictive thromboxanes and leukotrienes) may be perpetuated.² In addition to the responses to acute injury, some investigators have noted evidence of a more chronic problem in some infants, consisting of an increase in muscular fibers surrounding distal pulmonary arterioles in infants dying of meconium aspiration.³ These findings have led to the speculation that intrauterine stress and hypoxia may result in a hypermuscularized and more vasoreactive pulmonary vasculature, thereby predisposing these infants to persistent pulmonary hypertension.

Clinical

Persistent pulmonary hypertension

TABLE 2
Clinical Profile of Persistent
Pulmonary Hypertension

Near-term or term
Onset of symptoms generally within
12 hours of age
Cyanosis
Pallor
Respiratory distress, retractions,
grunting, labored breathing
Worse with stress or stimulation
Oxygen lability
Chest radiograph: variable, cardio-
megaly occasionally
Heart murmur

may complicate a number of different illnesses (*Table 1*). Perinatal depression has been implicated as has meconium aspiration syndrome, amniotic fluid aspiration, pneumonia, sepsis, transient tachypnea and hyaline membrane disease. Hypoxia, hypothermia, acidosis, hypotension, anemia, hyperviscosity, hypoglycemia and hypocalcemia all have been associated with persistent pulmonary hypertension as has premature ductal closure due to intrauterine exposure to prostaglandin synthetase inhibitors (e.g., aspirin, indomethacin). Infants with pulmonary hypoplasia associated with congenital diaphragmatic hernia or obstructive nephropathies also may experience pulmonary hypertension due to pulmonary vascular hypoplasia, as well as the vasoreactive persistent pulmonary hypertension found in other newborn infants. Neonates with cyanotic heart disease (especially transposition of the great vessels) also may experience pulmonary hypertension due to vasoreactivity of the pulmonary vessels.

The infant with persistent pulmonary hypertension is typically a near term or term infant who is cyanotic and pale in room air (*Table 2*). Onset of symptoms generally occurs within 12 hours of birth. Cyanosis may or may

not improve with oxygen depending on the extent of right-to-left shunting. The respiratory pattern may vary from normal to marked distress with tachypnea and severe retractions. When placed in oxygen, these patients may improve their oxygenation, but often demonstrate sudden, marked desaturation if they are disturbed or stressed in any way. This lability in oxygenation is the hallmark of the diagnosis of persistent pulmonary hypertension.⁴ The chest radiograph may be clear or may be consistent with the underlying condition (aspiration pneumonia, pneumothorax, etc.). A systolic heart murmur consistent with tricuspid insufficiency may be present. Congenital heart disease should be considered in infants with persistent pulmonary hypertension in which arterial oxygen tension remains low despite oxygen supplementation.

Diagnosis

The diagnosis of persistent pulmonary hypertension often is suggested in neonates suffering from acute lung injury when oxygen tension is labile (*Table 3*). In patients whose arterial oxygen tension is not labile and whose PaO_2 does not rise with oxygen supplementation, echocardiography often is helpful in differentiating persistent pulmonary hypertension from cyanotic congenital heart disease. If echocardiography is not readily available, the following evaluation may be helpful in differentiating between persistent pulmonary hypertension and congenital heart disease.

The hyperoxia test is performed by placing the infant in 100% oxygen and measuring the PaO_2 from a postductal site (umbilical or posterior tibial artery). The PaO_2 should be greater than 100 torr. If the PaO_2 is not greater than 100 torr, continue supplemental oxygen and draw simultaneous preductal (right radial artery) and postductal arterial blood gases. If there is a greater than 10-20 torr difference in oxygen tension with the preductal PaO_2 being greater than the postductal PaO_2 , a significant shunt through the

ductus arteriosus is likely to be present. If no difference in PaO_2 is found, the infant may have either cyanotic heart disease and/or persistent pulmonary hypertension with significant right-to-left shunting through the foramen ovale. If the diagnosis remains unclear, the hyperoxia-hyperventilation test developed by Peckham and Fox may be helpful.⁴

This test entails lowering the arterial carbon dioxide tension (PaCO_2) and elevating the arterial pH to "critical values" that may be associated with a decrease in pulmonary vascular resistance, reversal of right-to-left shunting and improved arterial oxygen tension. If the arterial oxygen tension increases to greater than 100 torr, the patient very likely has persistent pulmonary hypertension.

An echocardiogram is frequently helpful in differentiating persistent pulmonary hypertension from most forms of cyanotic heart disease. Because total anomalous venous return is difficult to diagnose even with echocardiography, a high index of suspicion for this lesion should be maintained. In addition, persistent pulmonary hypertension may complicate several forms of cyanotic heart disease (e.g., transposition of the great vessels, tricuspid atresia, etc.). In this situation, the echocardiogram will help define cardiac anatomy and may suggest the presence of persistent pulmonary hypertension.

When persistent pulmonary hypertension occurs, the echocardiogram

TABLE 3
Diagnosis of Persistent
Pulmonary Hypertension

Hyperoxia test
Simultaneous preductal and
postductal arterial blood gases on
100% O_2
Hyperoxia-hyperventilation
Echocardiogram
Cardiac catheterization

may demonstrate prolongation of the right ventricular pre-ejection period to right ventricular ejection time, tricuspid insufficiency (associated with transient myocardial ischemia), relatively enlarged right ventricle with septal deviation and/or right-to-left shunting at the foramen ovale or across the ductus arteriosus. In some cases, cardiac catheterization may be necessary to evaluate cardiac structure and directly measure pulmonary artery pressures.

Treatment

Although treatment of the underlying illness has remained a consistent therapeutic principle throughout the years, the supportive care and mechanical ventilatory treatment of persistent pulmonary hypertension has changed considerably over the last decade (Table 4). In the 1970s, patients with relative hypoxia (PaO_2 60-100 torr) on high supplemental oxygen were routinely intubated, pharmacologically paralyzed to control ventilation and hyperventilated to achieve a "critical PaCO_2 " and "critical pH."⁴ This meant the carbon dioxide tensions were reduced to a range of 15-30 torr and the pH was increased to a range of 7.5-7.6. Due to a significant risk of barotrauma (air leaks, bronchopulmonary dysplasia) with such hyperventilation techniques, a less aggressive approach with mechanical ventilation currently is being advocated.⁵

The infant with persistent pulmonary hypertension is currently treated with supplemental oxygen to maintain a PaO_2 of 50-150 torr. Transcutaneous oximetry or transcutaneous oxygen monitors are helpful for monitoring these infants for oxygen lability; intermittent arterial blood gases also may be useful. These blood samples may be obtained through peripheral arterial or umbilical arterial lines; postductal sites are preferred in our neonatal intensive care unit. Because environmental stimuli and stresses may exacerbate pulmonary arterial vasospasm in these infants, minimum stress precautions

TABLE 4
Treatment of Persistent Pulmonary Hypertension

Treat underlying conditions
Monitor arterial oxygenation
Minimal stress
Mechanical ventilation (conventional, hyperventilation)
Sedation and/or pharmacologic paralysis
Blood pressure support (volume expanders—dopamine, dobutamine, isoproterenol)
Vasodilation (tolazoline)
? High frequency ventilation
? Extracorporeal membrane oxygenation

are recommended. Sedation (e.g., morphine sulfate, secobarbital) may be helpful in particularly severe cases, such as those who require mechanical ventilation.

Cardiac output and blood pressure may require support with volume expanders and vasopressors such as dopamine, dobutamine and/or isoproterenol. Metabolic acidosis may be corrected with sodium bicarbonate. If progressive hypoxemia, hypercarbia and respiratory acidosis occur, the infant is likely to require intubation and mechanical ventilation. The lowest ventilator settings and inspired oxygen concentrations required to maintain PaO_2 above 50 torr are used initially. To improve oxygenation and ventilation, some infants may require sedation and/or pharmacologic paralysis. In the face of ongoing clinical deterioration, a trial of hyperventilation therapy to achieve the patient's "critical PaCO_2 " and "critical pH" is attempted. If no improvement occurs, conventional ventilation is resumed. If hyperventilation results in improved oxygenation, the ventilator pressures and inspired oxygen concentrations are reduced in small increments to avoid reversion to a fetal circulation pattern. Vasodilators generally are not recommended in neonates with persistent pulmonary hypertension. None of the vasodilators used to date have specificity for the pulmonary bed and, therefore, may cause systemic hypotension. Although

Priscoline, nitroprusside, fentanyl and prostacyclin have been studied, results with these agents have not been encouraging.

Two new treatment modalities are being used to treat severe persistent pulmonary hypertension unresponsive to the conventional therapies described above. High frequency oscillation⁶ and high frequency jet ventilation² have been employed in infants with severe pulmonary hypertension. Cornish and colleagues treated 15 neonates with a greater than 80% risk of mortality with high frequency oscillation. Seven responded and clinically improved, but eight patients failed to improve and were treated with extracorporeal membrane oxygenation (see below). Spitzer and coworkers treated 30 neonatal patients suffering from persistent pulmonary hypertension with high frequency jet ventilation. Twenty (67%) survived.² Although promising, the use of high frequency ventilation modalities in near-term and term neonates awaits further clinical trials and the development of commercially available high frequency ventilators.

Extracorporeal membrane oxygenation is a technique in which long-term cardiopulmonary bypass with a membrane oxygenator takes over the function of the lung so the acute lung injury can resolve without the injurious effect of high inspired oxygen concentrations and mechanical ventilation.^{6,7} Extracorporeal membrane oxygenation

tion has been used to treat infants with persistent pulmonary hypertension who have a less than 20% expected survival rate. With extracorporeal membrane oxygenation, survival increases to 80%; nearly 70% of the survivors of neonatal extracorporeal membrane oxygenation appear to be neurodevelopmentally normal at greater than one-year follow-up.⁶ Because this therapy has a significant risk potential due to the requirement for systemic heparinization and permanent ligation of the right carotid artery and right internal jugular vein, extracorporeal membrane oxygenation is reserved for neonates at extremely high risk for dying. Extracorporeal membrane oxygenation in neonatal persistent pulmonary hypertension will be reviewed in detail in a future issue of this journal.

Outcome

Before the application of extracorporeal membrane oxygenation and high frequency ventilation in neonates with persistent pulmonary hypertension, mortality rates ranged from 33% to 60%.^{8,9} Currently, with improved ventilatory technique and neonatal extracorporeal membrane oxygenation, mortality has been reduced to less than 20%. The mortality associated with persistent pulmonary hypertension of the newborn treated with high frequency ventilation is currently unknown due to the limited data available.

Because of the nature of their illness and associated hypoxemia, neonates with persistent pulmonary hypertension are at risk for both neurodevelopmental and pulmonary sequelae. It is estimated that 40% to 82% of survivors are neurodevelopmentally nor-

mal or near normal.^{9,12} Neurosensory hearing loss, however, has been reported in 20% to 50% of these children. The incidence of chronic lung disease or bronchopulmonary dysplasia in infants suffering from persistent pulmonary hypertension ranges from 6% to 36%. In addition to these sequelae, these children are also at risk for seizures and cerebral infarction.¹³ It is anticipated that outcome will continue to improve as diagnostic and therapeutic skills become more refined.

Conclusion

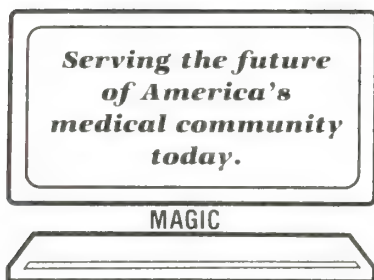
Persistent pulmonary hypertension is a condition in which the fetal circulation pattern persists after birth, leading to hypoxia, acidosis and cyanosis. The causes for this condition are protean. Persistent pulmonary hypertension most frequently complicates the condition of near-term and term neonates with perinatal depression, meconium aspiration, sepsis and congenital diaphragmatic hernia. Treatments include correction of the underlying illness and supportive care, oxygen, minimum stress, mechanical ventilation and occasionally pharmacologic paralysis, volume expansion, vasopressor agents and/or vasodilators. Treatment modalities being investigated include high frequency ventilation and extracorporeal membrane oxygenation. While mortality risk remains high in this group of infants, the long-term developmental outlook is generally optimistic.

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RADIOLOGY CLINIC

SECTION EDITOR:
Robert D. Tarver, M.D.
Director of Chest Imaging
Wishard Memorial Hospital
Indianapolis, Ind.

Young Woman with a Wheeze

FRANK E. LEE, M.D.¹
EDWARD C. WEISBERGER, M.D.²
Indianapolis

THE PATIENT WAS a 19-year-old woman who presented in mid-August 1986 with a sore throat, wheezing and difficult breathing. She had been in good health until this time. She was diagnosed with asthma and received medical treatment for approximately two months with poor results. A chest x-ray was then obtained and a midtracheal rounded mass was detected. Computed tomography (CT) showed a mass arising from the right posterior lateral wall of the cervical trachea without apparent extension into the wall.

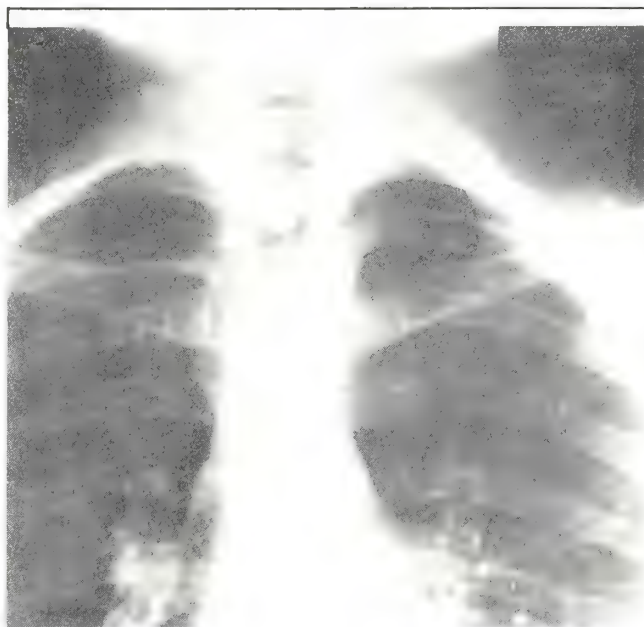
What is your diagnosis?

Discussion

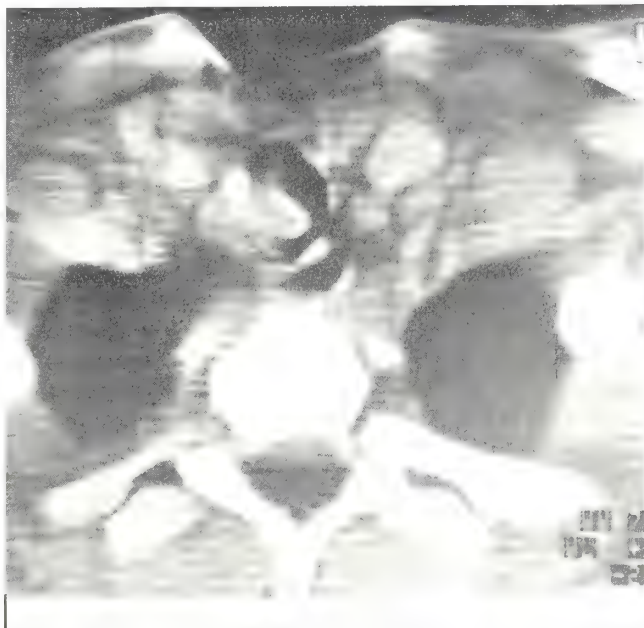
Laser bronchoscopy and endothelial excision found the mass to be an adenoid cystic carcinoma that was occluding 85% of the tracheal lumen. Two weeks later, a cervical tracheal resection and reconstruction was performed. The margins of the excision were tumor free. The patient then received 5,000 rads of radiation to the area. A recent two-year follow-up was negative for symptoms or CT evidence of recurrence.

¹Dr. Lee is a resident in radiology at the Indiana University School of Medicine.

²Dr. Weisberger is an associate professor of otolaryngology—head and neck surgery at the Indiana University School of Medicine.



Patient's
Radiographs
on Admission:
What Is
The Patient's
Problem?



RADIOLOGY CLINIC

CONTINUED FROM PRECEDING PAGE

Tracheal tumors are uncommon and may escape detection for some time. They are only evident 25% of the time on routine chest x-rays. It is estimated that the tumor must occlude 50% to 75% of the tracheal lumen before becoming symptomatic. Commonly, after symptoms have developed, there is a further delay until the proper diagnosis is discovered. The delay may be up to four months in squamous cell carcinoma, 18 months in adenoid cystic carcinoma and up to four years in benign conditions. Wheezing, progressive shortness of breath and hemoptysis from surface ulceration are common symptoms of most tracheal tumors.

Squamous cell carcinoma is the most common tracheal malignancy followed by adenoid cystic carcinoma in most series. Adenocarcinoma and oat cell

carcinoma also may occur. Other tumors in this area are all rare. The possibility of contiguous spread from esophageal, bronchial and laryngeal tumors also must be considered.

Adenoid cystic carcinomas represent 20% to 35% of all tracheal malignancies. The average age of patients with tracheal tumors in most series is 45 to 47 years of age with a range of 18 to 60. Unlike the surface epithelial tumors, tobacco use is not related to the development of adenoid cystic carcinoma. Adenoid cystic carcinomas are a low grade malignancy with much less tendency to invade than squamous cell carcinoma. However, these tumors may also present as an iceberg lesion with only a small intratracheal tumor component. They may be excised if discovered early and have the best prognosis of tracheal cancers.

However, they may recur after long intervals with reports of recurrences between five to 30 years.

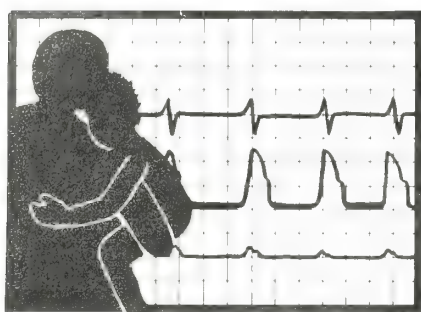
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Indianapolis

WITH IMPROVED SURVIVAL rates, orthotopic liver transplantation (OLTx) has become the treatment of choice for patients with liver cirrhosis and other diseases of the liver (Table 1). The National Institutes of Health consensus group decided in 1983 that OLTx offered an acceptable means of treatment for patients with end-stage liver disease.¹ Since then further improvement has been made in survival rates following OLTx. The most significant advancements in the 1980s have been in the area of immunosuppression. The use of cyclosporine A in OLTx patients virtually doubled the survival rate from 33% to 76%,^{2,3} and, more recently, the discovery of monoclonal antibodies to T lymphocytes (OKT3) has improved antirejection therapy.⁴ During this time other advances have led to improved patient care not only for OLTx recipients but also for other critically ill patients. Examples include better surgical technique, safer anesthesia, improved blood bank support, better liver preservation methods,⁵ more experienced surgeons and improved postoperative care with full-time intensive care, infectious disease and gastroenterology support.

To have a successful liver transplant program, specialized full-time ancillary support groups are necessary. The development of the liver transplant program at Methodist Hospital of Indiana, Inc. (MHI) was a natural extension of the existing transplant programs and the clinical support services already in place.

Procedure

The surgical procedure is demanding and challenging. The procurement of the donor liver is a surgical procedure itself. Once procured, the liver can be stored for 10 to 20 hours without blood supply. The recipient is then prepared for the operation with induction of anesthesia and orotracheal intubation. A pulmonary artery catheter is placed in adult patients (central venous line in children) along with large upper extremity IV access lines, urinary catheter, warming mattress, compression stockings, cardiac monitor, temperature probe and arterial catheter. In some adults a rapid infuser system and cell-saving device are used. In recipients larger than 25 kg, a centrifugal biomedicus pump for veno-venous bypass is used to return blood from the lower portion of the body to the heart during the anhepatic phase (when the liver and vena cava have been excised and until the implantation is complete). The standard incision is midline with bilateral subcostal extensions.

The most difficult portion of the operation is removing the diseased liver, which usually is adherent to viscera and retroperitoneum by vascular adhesions. The extent of adhesions, degree of collateral vessel formation and degree of coagulopathy and time required to perform the explant determine the transfusion requirement. The majority of patients can be transplanted with less than 20 units of blood,

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though occasionally a patient will develop profound coagulopathy and require more than 100 units of blood. To help guide coagulation factor replacement, a thrombelastograph is used to identify fibrinolysis and deficient clotting factors or thrombocytopenia. The implantation of the new graft involves four vascular anastomoses and one biliary anastomosis. The order in which the anastomoses are performed is suprahepatic vena cava first, infrahepatic vena cava second, then hepatic artery and portal vein. Before blood flow is restored to the liver, the preservation agents and air are flushed out of the graft. The vascular clamps are released and the liver is reperfused. Once hemostasis has been obtained, the biliary anastomosis is performed from the donor bile duct to either the recipient bile duct or to a Roux Y limb of small bowel.

Complications

There are many potential complications following OLTx (Table 2). The most frequently encountered complication are bleeding, infection and rejection.^{6,7} Most deaths occur in the first month following OLTx, with the most critical time for development of severe complications being the first week. Continuous surveillance and anticipation of complications are critical in the early postoperative course to ensure optimal chance of survival. Reoperation is often necessary, and the need for retransplantation in most series is 15% to 20%.^{6,7} The following case demonstrates the severity of complications that can arise, and the need for a specialized multidisciplinary approach toward OLTx recipients that results in successful outcomes.

Patient

The patient was born 5/87, in a normal delivery following a normal pregnancy. At 2 weeks of age he was jaundiced and was referred to MHI. He then underwent surgical exploration and liver biopsy, and the diagnosis of biliary atresia was confirmed.

TABLE 1*
Indications for Liver Transplantation

Adults	Pediatrics
<u>Cirrhosis</u>	<u>Cirrhosis</u>
Post-hepatic	Biliary atresia
Primary biliary cirrhosis	Familial cholestatic disease
Sclerosing cholangitis	Byler disease
Autoimmune hepatitis	Alagilles disease
Alpha-1-antitrypsin def.	
Hemochromatosis	Inborn Errors of Metabolism
Wilson's disease	Alpha-1-antitrypsin Def.
Cryptogenic cirrhosis	Wilson's disease
Chronic Budd-Chiari	Tyrosinemia
(Alcoholic liver disease)	Hemochromatosis
	Glycogen storage disease
<u>Fulminant Liver Failure</u>	<u>Fulminant Liver Failure</u>
Acute viral hepatitis	Same as adults
Acute Budd-Chiari	Reye's syndrome
Drug toxicity	
Acute Wilson's decompensation	
<u>Malignancy</u>	<u>Malignancy</u>
Hepatocellular Ca	
Hepatoblastoma	Same as adults
Other primary liver malignancy (e.g., hemangio-endothelial sarcoma)	

*Adapted from Van Thiel *et al*¹⁵

A porto-enterostomy was made between the hilum of the liver and a Roux Y jejunal limb. The Roux Y limb was externalized with two ostomies in an effort to exteriorize the bile drainage (modified Kasai procedure); however, as is often the case, the child did not benefit from the procedure and progressive liver failure ensued.

The option of OLTx was discussed with the family, and the child was referred to an out-of-state institution. A takedown of the exteriorized ostomies was performed in anticipation of possible transplant. To evaluate the patient for the possibility of OLTx at the out-of-state institution, portal vein patency was assessed by a Doppler ultrasound and mesenteric angiogram. Conflicting results were obtained. The

ultrasound demonstrated portal vein patency; however, the angiogram erroneously suggested portal vein occlusion, and the family was informed that a transplant was not feasible at that time, since portal vein occlusion is a relative contraindication to OLTx.

In April 1988, the child was evaluated at MHI as a possible OLTx candidate. He was markedly jaundiced, with massive ascites and respiratory distress from malnutrition and ascites. A repeat ultrasound confirmed portal vein patency, and the outside angiograms were evaluated. An exploratory laparotomy was performed, and a portal angiogram was performed through a mesenteric vessel that showed only collateral vessels filling with contrast; however, with injection of the

umbilical vein with contrast, the hepatic venous and the portal venous systems were seen, demonstrating patency of the portal vein with reversal of portal blood flow away from the liver (hepatofugal blood flow).

The child was activated on the transplant list and was evaluated by the pediatric gastroenterologist. Diuretic medications and formula feedings were readjusted with improvement in ascites and respiratory status.

In June 1988 the child was not thriving and was admitted for medical management. A donor had not yet been identified, and malnutrition was worsening. The child was given albumin and diuresis, and tube feedings were instituted with some improvement in nutrition. He was sent home with nighttime tube feedings. Over the next two months the child showed slow deterioration in liver function despite optimizing medical care. Due to progressive liver failure, he required readmission.

A suitable donor was identified and OLTx was performed two days later. The operation went smoothly and the liver was revascularized within eight hours. Due to the previous bowel operations and portal hypertension with extensive collateral vessel formation, the dissection of the bowel to create a conduit for bile excretion was difficult. The previous Roux Y was atrophic and strictured and had several enterotomies that occurred at the time of hepatectomy. Creation of a new Roux Y and lysis of existing adhesions, formation of the biliary anastomosis and hemostasis required an additional five hours. The following is an account of the difficult postoperative course:

POD 1—Transaminases elevated (AST 6000, ALT 2000, GLDH 2000) with concern about vascular patency, but duplex ultrasound demonstrated patency of portal vein and hepatic artery.

POD 2—Transaminases, PT, bilirubin normalizing, pulmonary status good.

TABLE 2 Potential Complications Following Orthotopic Liver Transplantation	
Hepatic	Central Nervous System
Graft nonfunction	Seizures
Biliary obstruction	Intracerebral bleed
Biliary leak	
Acute rejection	Respiratory
Chronic rejection	Pneumonia
Vascular occlusion	Respiratory acidosis
Vascular disruption	Pleural effusion
	Adult respiratory distress
Gastrointestinal	
GI hemorrhage	Infectious Disease
Bowel perforation	Bacterial infection
Bowel obstruction	Fungal infection
	Viral infection
Hemodynamic	Renal
Postoperative hemorrhage	Acute renal failure
Myocardial infarction	Chronic renal failure
Hypertension	
Hypotension	

POD 3—Child extubated.

POD 8—Child fussy, still not taking diet, abdomen soft.

POD 9—Fever, AST and bilirubin elevated, abdomen distended; exploratory laparotomy showed no gross contamination but peritoneal culture demonstrated candida, and liver biopsy showed acute rejection; antifungal and antibacterial drugs started, anti-rejection therapy given.

POD 10—With one steroid bolus of 10mg/kg, AST, bilirubin and fever were better.

POD 11—Abdomen more distended, fever; exploratory laparotomy showed perforation of anterior wall of jejuno-jejunostomy that was repaired; peritoneal culture positive for candida and gram negative bacilli.

POD 13—Clinical improvement, consideration given to transfer from PICU.

POD 14—Sudden deterioration with respiratory distress, abdominal disten-

tion, blood from abdominal drain; exploration demonstrated mycotic hepatic arterial disruption, anastomosis revised but liver largely necrotic, with DIC, liver failure and secondary organ failure; placed on list for urgent retransplant.

POD 16—A suitable donor identified three times the patient's weight; retransplant accomplished by placing donor iliac artery graft on donor hepatic artery tunneled to infra-renal aorta site for hepatic artery anastomosis in attempt to avoid repeat mycotic disruption.

POD 17—Reoperation to evacuate hematoma; liver tests normalizing, creatinine (Cr)0.8.

POD 18—Alert, extubated.

POD 21—Abdominal distention, acute respiratory distress; exploratory laparotomy showed posterior wall of jejuno-jejunostomy perforated that was repaired; peritoneal cultures negative for candida.

POD 25—Persistent fever present despite negative cultures; drug fever suspected and amphotericin B was discontinued.

POD 28—Acute respiratory deterioration with abdominal distention; exploratory laparotomy showed serosal surface bleeding but no significant bleeder, peritoneal cultures negative.

POD 39—Afebrile, normal liver function (AST 31u, ALT 35u, t. bili 0.3mg%, PT 12.9sec), normalizing Cr (0.6mg%), but persistent low WBC with increased monocytes and lymphocytes, viral infection suspected; transferred from PICU after 39 days.

POD 48—Discharged to home on nighttime tube feedings on the following medications: CyA, prednisone, Mycostatin, albuterol and Septra.

Discussion

As of Nov. 15, 1988, seven patients have undergone OLTx at MHI. The primary indication for transplant in all patients was cirrhosis. Five of the adults had chronic active hepatitis as the cause of cirrhosis, and one had secondary biliary cirrhosis related to liver trauma seven years earlier. The child had biliary atresia as the cause of cirrhosis. In addition, two adults had elevated α -fetoprotein levels suggesting hepatocellular carcinoma, but it could not be identified by preoperative computed tomography (CT) scan. In both patients, hepatocellular carcinoma was found at the time of transplant but was confined to the liver. In addition to the primary transplants, two patients required retransplantation. Six of the seven patients are alive (86% overall survival, eight days to five months follow-up). One patient died on post-op day 2 of sudden right ventricular failure and cardiac arrest secondary to pulmonary fibrosis and severe pulmonary hypertension despite normalizing liver function. Five of the remaining six patients have undergone full recovery. The other patient is eight days from the time of retransplant with near normal liver function, and full recovery is anticipated.

This case highlights several points about pediatric liver transplantation. Although it may be appropriate to attempt a porto-enterostomy in children with biliary atresia, only approximately 10% will achieve long-term benefit.⁹ In theory, by externalizing the bile flow, the progression to cirrhosis will be slowed.¹⁰ However, this has not been well documented. It is probably beneficial to attempt a single porto-enterostomy (Kasai procedure) in a child with biliary atresia to delay the need for OLTx until the child is larger, preferably at least 10kg. Repeat Kasai procedures and modified Kasai procedures (such as this one with an externalized Roux Y limb) only add to the complexity of the transplant that is inevitable in the majority of cases.¹¹

Doppler ultrasound is the procedure of choice to evaluate portal vein patency preoperatively as well as postoperatively.¹² The addition of color flow mapping to duplex sonography provides another dimension to vascular hemodynamics. Hepatic artery, portal vein patency and direction of flow are depicted with ease with current state-of-the-art scanners. The need for Doppler is well demonstrated in this patient. He was rejected as a candidate for transplant based on the findings on mesenteric arteriogram and standard ultrasound. Portal vein patency and reversal of flow would have been demonstrated if Doppler studies had been available. Occasionally the duplex ultrasound may give false information, but in general it is a better study and is portable and noninvasive. In addition to vascular integrity, the duplex ultrasound can demonstrate ischemic areas or abscesses in the liver, biliary dilatation and fluid collections in the abdomen.

The presence of active peritonitis is generally considered a contraindication to OLTx.¹³ Upon explant of the first graft, mycotic disruption of the hepatic arterial anastomosis was confirmed by demonstrating active candida infection in the tissues of the anastomosis. If gross infection were apparent within

the abdomen, a retransplant would not have been attempted. Retransplant in these circumstances normally is soon followed by sepsis and death; however, in this instance, the contamination was not grossly significant. By lengthening the hepatic artery with donor iliac artery and tunneling the artery to a previously undissected site to make the anastomosis in an area free of infection, the chances of recurrent disruption are reduced. The question of using a scarce pediatric organ as a retransplant rather than for a child awaiting a primary transplant frequently arises; however, the child in most urgent need of the organ should be given priority whether it is a primary transplant or retransplant.

An alternative to whole organ transplants is the use of reduced size grafts from larger donors. In the United States this area is being developed primarily by the University of Chicago liver transplant program.¹⁴ The use of reduced size organs expands the donor pool for small children by making larger grafts available to them. The grafts are reduced in size by performing either a right lobectomy or right trisegmentectomy on the liver graft before implantation. It does add operative time and technical difficulty to the procedure, but often is the only answer to obtaining a suitable graft in urgent situations. In this case, the patient was listed on the computer in a larger weight range for possible donors; however, because he had massive ascites before his first OLTx and the second donor was only three times his size, it was not necessary to reduce the size of the graft. Generally with a donor four to six times the size of the recipient, a reduction in the graft is necessary. If it had been necessary, a reduced size graft would have been used in this case.

The need for a multidisciplinary approach in the care of patients with end-stage liver disease is apparent from this case. The input from the pediatric gastroenterologist in extending the life of the child before the transplant allow-

ed sufficient time for a donor to become available. Also, the child was adequately prepared to best withstand the demands of the transplant and post-operative course by optimizing his nutritional support and general pretransplant care. The expertise of the full-time pediatric intensivist is important in addressing the complex problems that can occur in any patient in a critical care setting. The continuous availability of services provided by the lab and operating room personnel was also important in his recovery. Finally, the familiarity of the PICU nursing staff with the care of severely ill children was essential to the successful management of this child's severe complications following OLTx.

Summary

A multidisciplinary approach is necessary in addressing the needs of a patient with end-stage liver disease. The development of the liver transplant program at MHI was a natural extension of the transplant and critical care programs already in place. The case report described exemplifies that valuable input from ancillary support groups is necessary for a successful liver transplant program. Experience gained in the area of liver transplantation not only benefits liver transplant

patients but also extends to other areas of clinical medicine. One year ago, an Indiana resident had to travel out of state to receive this specialized form of care. Today this is no longer the case.

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Hypertension as the Presenting Problem in Primary Hypothyroidism

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PRIMARY HYPOTHYROIDISM is a common disease frequently insidious in onset with effect upon all organ systems. The mechanism by which the thyroid hormone influences cellular metabolism is unknown, though oxygen consumption and high energy phosphate availability both increase when intact cells are exposed to the hormone. Common manifestations of advanced hypothyroidism are well recognized, but with the current ease of acquiring laboratory data, the diagnosis can be made earlier when few symptoms or signs are present. Commonly, patients now present with a single symptom or abnormality for evaluation. Due to the extent of organ involvement with hypothyroidism, clinicians of all specialties have reason to consider hypothyroidism during patient evaluation.

Hypotension has been associated with severe hypothyroidism or myxedema but is now rare. Though hypertension is not generally considered in the list of manifestations of hypo-

thyroidism, it can be the only finding. An illustrative case is presented.

Case

A 45-year-old woman presented on Feb. 27, 1987, for evaluation of hypertension. An elevated blood pressure of 150/102 mm Hg was noted initially in January 1987. One year earlier, her pressure had been documented at 102/70 mm Hg. She had experienced no weight change but had noted episodic rapid heart rate with excessive sweating for a few months before presentation. She denied family history of multiple endocrine adenomatosis, though she was not well versed in her paternal ancestry. There was no family history of hypertension. A male sibling recently had begun therapy for diabetes mellitus. The patient smoked two packs of cigarettes per day.

On examination, the only abnormality was the elevated blood pressure. Weight was 114 pounds, heart rate 80, temperature 98 degrees orally, and the thyroid was not palpably enlarged. On neurologic exam, motor system and reflexes were normal.

With new hypertension and a history of sweating, the patient's evaluation included 24-hour urine collection for catecholamines and catecholamine byproducts, a chemistry profile and T4 with TSH. The catecholamine studies were normal, T4-6.3 $\mu\text{g/dL}$ (normal 5-12 $\mu\text{g/dL}$) and the TSH was elevated at 23.1 micro-IU/mL (normal to 9.8).

Therapy with thyroid supplement was instituted. Over the subsequent year, her blood pressure has been controlled with values of 110/80 mm Hg and 126/78 mm Hg being representative. A repeat TSH on Feb. 19, 1988, was less than 1 micro-IU/mL.

Discussion

Hypertension is a common problem for which patients are evaluated and occasionally referred. Either before therapy is instituted or when treatment is difficult, thought is given to reversible etiologies. Hypothyroidism is rarely considered in a list of secondary causes of hypertension. This case illustrates both the relationship between primary hypothyroidism and hypertension, and the problem with T4 measurement. This patient's T4 value was in the low/normal range, but the elevated TSH to nearly three times normal confirmed the presence of primary hypothyroidism. TSH monitoring is more useful than an isolated T4 value in determining the presence of primary hypothyroidism.

The association between primary hypothyroidism and hypertension has been documented, but the relationship is not widely recognized. Barnes, in 1975, described a group of 2,000 hypothyroid patients.¹ In this population, if hypertension were present, there was an 80% incidence of normalization of blood pressure with thyroid supplementation. He attributed the elevated blood pressure to a decrease in renal blood flow. Richards, in a well-controlled 1985 study in New Zealand, described serial (a) serum cortisol, (b) plasma renin activity, (c) serum epinephrine, (d) serum norepinephrine, (e) aldosterone levels, and (f) angiotensin levels in five patients with hypothyroidism and hypertension.² All patients were on a controlled sodium intake. Elevated plasma norepinephrine levels were present in all five patients before therapy. With thyroid supplementation that normalized all patients' blood pressures, serum norepinephrine levels decreased. The study recogniz-

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ed the limitation of the use of serum norepinephrine as a measure of sympathetic tone. However, the other measured substances showed no definitive change with treatment of hypothyroidism and improvement in the blood pressure. His conclusion was increased sympathetic activity and heightened vascular responsiveness played a role in the elevated blood pressure in hypothyroidism. Clearly the etiologic relationship is unknown.

Conclusion

A patient with elevated blood pressure secondary to hypothyroidism presented. Her blood pressure normalized with thyroid supplementation. In the list of most easily treated causes of hypertension, hypothyroidism, though rarely considered, ranks with excessive licorice ingestion and the use of oral contraceptives as most easily treated. Unfortunately, as in this patient, there may be no clinical clues to

the presence of hypothyroidism, and thyroid function screening may be necessary.

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Perioperative Red Cell Transfusion

Summary of NIH Consensus Development Statement

TRANSFUSION OF RED cells is a life-saving measure in the management of a variety of medical and surgical conditions. The AIDS epidemic has recently raised the level of apprehension regarding the transmission of infectious disease by transfusion. Furthermore, there is new information about the significance of anemia in the perioperative period. These developments have stimulated a re-examination of the benefit-to-risk relationship for transfusion therapy.

To assess this procedure, the National Institutes of Health, from June 27 through 29, 1988, held a Consensus Development Conference on Perioperative Red Cell Transfusion. Based on scientific data presented, a consensus panel from the medical profession, blood banking organizations and the general public, wrote a consensus statement. The panel's findings follow:

Modern surgical and anesthetic practices have been guided by the belief that a hemoglobin of less than 10 g/dL or a hematocrit of less than 30% indicates a need for perioperative red cell transfusion.

Current experience suggests that most patients with hemoglobin values > 10 g/dL rarely need perioperative transfusions, whereas those with acute

anemia and hemoglobin values < 7 g/dL will need blood more frequently.

No single criterion can replace good clinical judgment as the basis for a decision regarding perioperative transfusion. Deciding to transfuse red cells depends on clinical assessment aided by laboratory data such as arterial oxygenation, mixed venous oxygen tension, cardiac output, the oxygen extraction ratio and blood volume, when indicated.

Many physicians and patients are concerned that anemia may increase perioperative morbidity. There is no evidence that mild to moderate anemia contributed to perioperative morbidity. For example, healing is not compromised by normovolemic anemia.

Among the risks associated with homologous red cell transfusion are transmission of human hepatitis virus, human immunodeficiency virus (HIV) and human T-cell lymphotropic viruses (HTLV-I), cytomegalovirus and, on rare occasions, other microbial agents such as Epstein-Barr virus, babesia, Parvovirus and plasmodia. Therefore, the number of homologous transfusions should be kept to a minimum.

Although homologous red cell transfusions are becoming safer, they should not be considered substitutes for good surgical and anesthetic techniques. Progress in anesthesia has allowed more time for the surgeon to be fastidious about hemostasis, and new surgical techniques have improved the surgeon's ability to control bleeding.

A variety of alternatives to homologous transfusions now is available. Among these are the use of autologous blood collected perioperatively and intraoperative blood salvage, which appears to be safe in some applications and reduces the need for homologous transfusion. In addition, pharmacologic approaches to reducing the need for homologous transfusion are promising.

For example, hemostasis may be improved by the use of desmopressin and recombinant erythropoietin (r-HuEPO) and may increase the amount available for autologous transfusion.

Some of the research initiatives needed are: studies on the effect of anemia on the rate of recovery and length of hospital stay; the development of predictors that better define the need for perioperative red cell transfusions; the design of additional studies on the value of directed donations; the development of ways to make transfusions safer; the development of appropriate blood substitutes; and the determination of the risk of transfusion-transmitted infection with contemporary donor screening procedures and evaluation of new measures to identify infected donors.

Free copies of the complete NIH Consensus Statement on Perioperative Red Cell Transfusion may be obtained from the Office of Medical Applications of Research, Building 1, Room 216, National Institutes of Health, 9000 Rockville Pike, Bethesda, Md. 20892.

This summary was provided by the National Institutes of Health.

Look-Alike and Sound-Alike Drug Names

BENJAMIN TEPLITSKY, R. PH.
Brooklyn, N.Y.

Look-alike and sound-alike drug names can be misinterpreted by a nurse reading doctors' orders or by a pharmacist compounding physicians' prescriptions. Such misunderstandings can result in the administration of a drug not intended by the prescriber. Awareness of such look-alike and sound-alike drug names can reduce potential errors.

Category:
Brand Name:
Generic Name:
Dosage Forms:

Category:
Brand Name:
Generic Name:
Dosage Forms:

OMNIPAQUE

Radiopaque agent
Omnipaque, Winthrop
Iohexol
Injection

MICRONOR

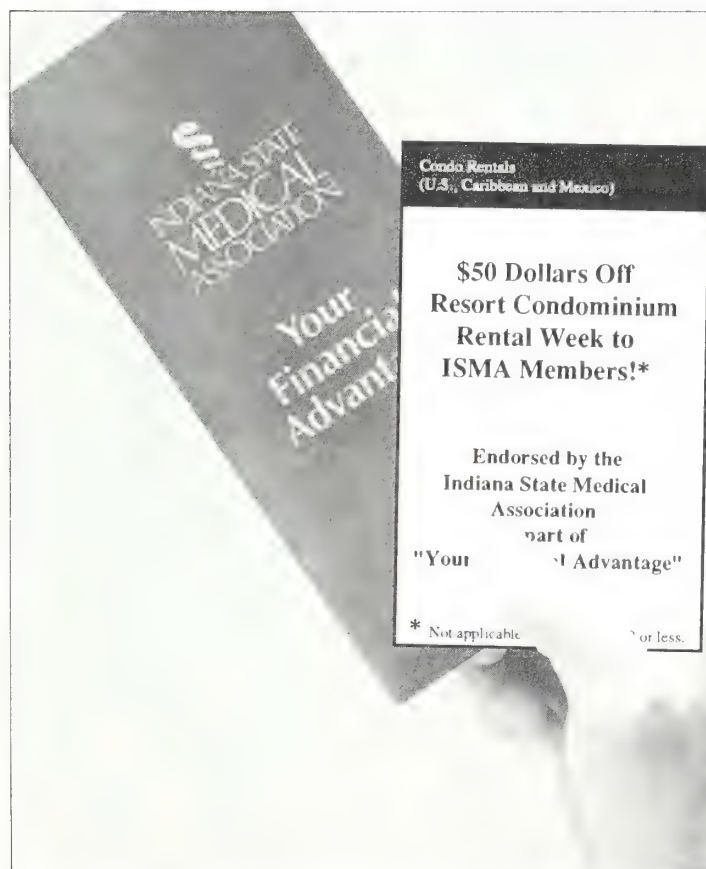
Oral contraceptive
Micronor, Ortho
Norethindrone
Tablets

OMNIPEN

Penicillin
Omnipen, Wyeth
Ampicillin
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capsules, powder for
oral suspension

MICRONASE

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Micronase, Upjohn
Glyburide
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Section 89—No Relief in Sight

GREGORY WRIGHT, CFP
Indianapolis

A TECHNICAL CORRECTIONS bill recently passed by Congress in the waning moments of this year's session fell short of the relief many people had hoped for. It failed to include a meaningful Section 89 "safe harbor." Practical advice is offered on how to reduce the likelihood of Section 89's harsh penalties.

Beginning this year, Section 89 of the Internal Revenue Code requires that employee benefit plans generally meet both qualification and non-discrimination standards in order for these employee benefits to escape taxation to the covered employees, and for the cost of these plans to avoid a 28% tax to be paid by the employer.

The exact month and day this law will take effect during 1989 will vary from employer to employer, and each separate employer plan may have a different effective date. The effective dates will depend on several issues, including the employer's fiscal year, the period for which each benefit plans books are kept, the deductible/co-insurance plan year and the insurance policy plan year.

Almost all health and welfare benefit plans are subject to these rules, including group medical, group life, cafeteria, group legal, education assistance, tuition reimbursement and dependent care assistance.

The qualification standards require that the plan be in writing (an in



GREGORY WRIGHT, CFP
Indianapolis

surance policy is not sufficient), employees be notified of the benefits available, employees' rights must be legally enforceable, etc. All employers, regardless of size, must comply with this law.

In addition, Section 89 requires these benefits to pass complex nondiscrimination tests in order for benefits to be nontaxable to highly compensated employees.

The recent technical corrections act did eliminate some absurd administrative requirements, such as performing on-going daily nondiscrimination tests. Testing would now be allowed once a year on a date of the employer's choosing. However, the act tends to greatly increase the administration of certain employee options, such as free choice between different health care options, such as employee and family coverage, and different health plans, such as an indemnity plan and a health maintenance organization (HMO). As it stands

now, each health plan option must be tested separately for nondiscrimination.

It now appears that many small employers will simply discontinue providing these benefits to employees. This is because of the cost and hassle induced by Section 89 and the risk of its penalties.

Furthermore, because health insurance programs have experienced 20% to 40% annual cost increases and many employers perceive that employees do not appreciate these benefits, some employers do not feel that discontinuing these programs will hurt their ability to attract and retain employees.

I believe that many smaller employers with fewer than 15 employees will discontinue providing health insurance benefits. This will particularly be true for marginally profitable employers and low-skilled organizations.

The basic qualification requirements (written plan, legally enforceable, etc.) should be relatively easy to meet. Attorney Larry Schmits, who specializes in employee benefits matters, advised his affected clients to comply with these provisions. Basically, as Schmits pointed out in a recent telephone interview, these provisions are currently required by ERISA legislation already on the books.

Schmits advised that an insurance policy does not suffice. It is a contract between the employer and the insurance carrier and the employees are simply third party beneficiaries of the contract. A separate written plan document and a summary plan description are required.

Schmits also said this written document should contain protective clauses for the employer that allow future modification of benefits, changing of insurance carriers, the ability to terminate the plan in a timely manner, etc.

The burdensome nature of the non

The author is vice president of Conner Insurance Agency, Inc. and is responsible for executive and employee benefits divisions. Offices are located in Indianapolis, Bloomington, Kokomo and Fort Wayne.

discrimination testing for some employers may result in their compliance with the qualification or written plan summary only. According to Michael Reece, an enrolled actuary, "some employers will find that it makes more sense to simply not test (for) non-discrimination for some of the employer sponsored welfare benefits, to treat the cost of these benefits as additional income to each highly compensated employee (HCE)."

This practice is allowed within the act. Also, some employers may gross up the salary of HCEs to offset additional personal income taxes.

A highly compensated employee is basically a 5% or more owner, a corporate officer, receives \$75,000 or more in compensation, or received \$50,000 or more in compensation and was among the top-paid 20%.

According to David Canarie, assistant counsel for UNUM Life Insurance Co., a large national company estimated the cost of complying with the nondiscriminatory portion of Section 89 to be \$19 million per year. They have elected to treat the cost of these benefits to the HCEs as compensation. The cost to gross up the salary of these HCEs to offset additional personal income taxes is estimated by them to be \$2 million, or \$17 million less.

That approach, however, probably will not be the most economical for most small- and medium-sized employers.

Generally, the most common sense approach appears to be the following:

- Start now.
- Simplify your employer benefit programs.
- Perform some basic testing with

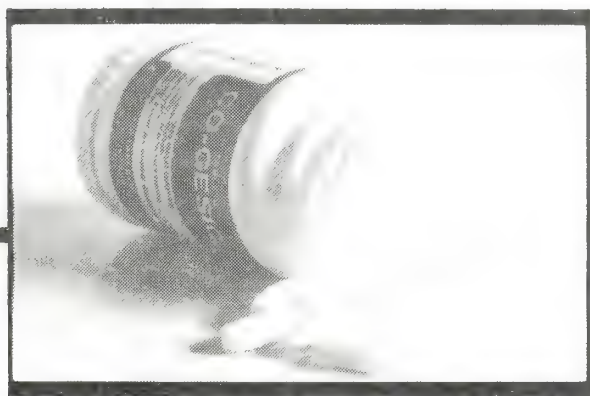
the help of a qualified benefits expert.

- Write a basic summary plan description that has provisions to adequately protect the employer.
- Perform the nondiscriminatory testing. If it appears that you will have little problem in complying with the basic coverage test (the 80% test), then you are in business.
- If it appears that you cannot meet the basic coverage test, then tack the benefits cost on the HCEs as additional compensation.

Section 89 penalties are harsh. If you do not plan to comply, experts advise employers to discontinue providing health and welfare benefits. Most employers, however, will find that compliance will not be as difficult as foreseen.

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How To Manage Multiple Insurance Plans

PHILLIP SNYDER, M.D.
Indianapolis

CHANGES IN THE health insurance industry have meant not only the development of new kinds of insurance, but also an explosion in the number of insurance providers and variety of plans available.

Increasingly, physicians are participating in additional plans to remain a viable option for their patients. Often this need correlates to contracting with available HMOs and/or PPOs, which are being aggressively marketed to individuals and corporations. We need to be aware of the potential problems and benefits, inherent to the business management of multiple insurance plans within our medical practices.

Reason To Offer Multiple Plans

Estimates exist that up to 25% of the American population change residences each year. This transiency is responsible for a significant turnover rate within our practices due to factors beyond our control. From a business standpoint, we strive every day to ensure that the factors within our control—the provision of appropriate quality medical services within a caring environment for a reasonable price—are enough to develop and preserve a trusting and lasting physician-patient relationship. Continuity of care is essential to developing such a physician-patient relationship. Although we cannot prevent losing patients due to occupational changes and/or transiency, losing patients because financial reasons require them to switch to an alternative health care plan is, in part, an avoidable threat to continuity of care.

The author is associate medical director of HealthPlus HMO.

Offering a variety of plans safeguards against losing the rapport that a physician has developed with an individual or family. If that individual or family selects an alternative health care insurance plan because it is financially advantageous to do so, your presence on the list of physicians who participate in that plan will likely preserve that established relationship.

Selecting a Good Mix

A good rule of thumb in selecting what types of plans to offer is to be aware of the plans presently being offered by businesses to employees in your practice area and attempt to mimic that mix. As an example, if 65% of employers only offer traditional indemnity insurance coverage and 35% are covered by HMOs and/or PPOs, a strong chance exists that your patient mix may approximate that same proportion in types of insurance coverage.

In such a case, if a physician accepts indemnity coverage but only one of the HMOs or PPOs covering local employers, the physician could be eliminating potential patients by not offering enough HMO/PPO options. One form of insurance coverage should not necessarily dominate another within your practice unless such dominance exists in the local market.

In addition, consider where your patients work. If one-third of your patients work in a nearby factory, you could lose a significant number of patients if the employer switches to a form of insurance coverage in which you are not participating. If necessary, keep in touch with patients or their company benefits manager to ensure that you can quickly accommodate any new plans within your practice.

Consider Your Office Staff

One major factor that needs to be considered is the impact that participation in multiple medical insurance plans

(Editor's note: This is the last in a series of three articles about managed health care plans.)

and alternative health care systems may have on your office staff. Participation in additional plans will generate an additional workload for your office staff and may necessitate hiring an additional staff person. While large physician groups may have the budget available for a new person, a physician practicing alone may not be able to justify the expense.

An alternative health care plan should be willing to provide adequate training and thoroughly explain all policies, procedures and benefit packages. Equally important, the plan should educate patients or enrollees in how the plan works and provide descriptions of benefits and coverage, copayments and exclusions. Your office staff depends on the patient and plan to provide accurate, complete and timely insurance information and depends on the insurance providers for notification of any changes in the plan regarding filing procedures and benefit coverage. When notification is slow and patients, staff and/or physicians do not understand coverage, timely processing of claims becomes difficult, leading to delayed payment and additional confusion and frustration.

Managing Questions

Insurance providers understand that when a physician is unhappy patients, too, may become unhappy, and the provision of medical services suffers. The plan cannot afford not to respond to a physician's questions or problems and risk losing contracting physicians and eventually enrollees as well.

The plan should stand ready to respond to your needs and should provide one telephone number that your staff members can call to immediately document patient coverage or to

resolve problems and answer questions promptly. Contacts with the plan representatives should be documented. The plan representative should provide an initial response and set a goal for resolving a particular situation. Questions on policies and paper work generally should be resolved quickly and easily.

Occasionally, a certain plan may become unmanageable. Your staff members may fall behind in paper work due to time wasted tracking questions with the plan. Plan problems or frequently policy changes, coupled with the stress of processing several different plans and remembering many details, could increase staff turnover and thereby decrease office efficiency. In such a situation, you could consider terminating your affiliation with the plan. However, such a decision to terminate naturally could affect your patient base, should not be taken lightly and should be made only after problems are unable to be reconciled. Carefully follow the procedures necessary to adjust or terminate your affiliation so that patient care is not jeopardized.

Minimizing Confusion

Summarize the basic payment systems, policies, procedures and benefit packages for each plan and keep them handy for reference. Claims departments depend on appropriate coding to eliminate problems when claims are submitted to the plan's main office. Incomplete or incorrect forms delay payment. Generating a list of the most frequently used codes is helpful and time-saving in filing claims forms. For prepaid plans, accurate logging of all patient contact and services is of the utmost importance. The information from these logs assists in determining future reimbursement via monthly capitation payments by directly reflecting upon actuarial data for the plan.

Actuarial Data a Factor

It's important to understand that prepaid plans depend on actuarial data to determine payments for all medical

services, including primary care physician compensation in a capitation schedule. New health care recommendations by leading health care organizations or new legislation can change the amount of treatment patients seek and the cost of services. For example, the federal surcharge on immunizations that went into effect this past year caused an immediate increase in the cost of immunizations. Though no one, not even an insurance provider, can forecast the future, once the information is provided the plan representative should respond quickly to make appropriate adjustments. Physicians have to recognize that the payment plan needs time to adjust to changes in the provision of health care services subject to utilization, pricing and the development of new modalities used in medical diagnosis and treatment due to advancing technology.

Consider Self-Referring

When signing a prepaid plan contract as a primary care physician, be aware that if you are qualified to provide more specialized services that fall outside that plan's definition of primary care services, you should sign a referral physician contract as well. Signing a referral physician's contract permits you to self-refer for these more specialized services and procedures that you provide. Such examples may include obstetrics, minor surgery or endoscopic procedures, depending on your area of expertise. When appropriate, it behooves the physician to provide all the medical services within his or her realm of expertise. Primary care services not provided personally may be deducted from the proceeding month's capitation payment while specialty services provided result in additional reimbursement.

Implement Checks and Balances

You know your practice more thoroughly than anyone else. Be sure to establish a system of checks and balances to help you monitor the insurance plans you offer. Have the of

fice staff identify and communicate to you plans that are tardy in payment or slow to respond to inquiries. If payment is consistently tardy for a particular plan, be in touch with the appropriate plan, making sure that you and your front office are handling all billings and claims correctly to expedite payment. In a prepaid health plan, your best check and balance is to monitor or inspect your patient encounter logs on a regular basis. With it, you can rapidly assess your fee-for-service equivalency to determine that you are receiving adequate compensation for your services.

Be Aware

If you take the time to monitor the impact that managing multiple health care plans has on your practice, you may prevent situations that create personal frustration and financial stress on the practice. Remember these considerations:

- Mimic the mix of plans offered by local employers.
- Consider a variety of plans. Select those that can be readily adhered to and can provide adequate compensation for your services.
- Educate yourself and your staff in each plan's management.
- Consider additional front office staff to limit stress and avoid unnecessary staff turnover.
- Summarize the basic payment procedures, policies and benefit packages for each plan in which you participate and keep the summary handy.
- Phone numbers for key contact personnel for each plan should be available at all times; document all contacts concerning policies and procedures affecting patient care.
- Sign contracts that enable you to self-refer when appropriate.
- Keep accurate and complete patient encounter logs for any prepaid plan.
- Establish a system of checks and balances. Keep lines of communication open with your staff and each plan involved.

The Drama of the 1989 Legislative Session Begins To Unfold

JULIANNA M. NEWLAND
ISMA Director of Government
and Specialty Society Relations

"You can't fool all of the people all of the time, but all I want is a good sizeable majority."—Unknown

FOR THOSE POLITICAL pundits who like their opening curtain to be improbable, yet impressive, then welcome to the 106th session of the Indiana General Assembly.

The political makeup of the Indiana House of Representatives is 50 Republicans and 50 Democrats. This is the first time in recorded history that the membership has been evenly split. The members elected two people, Paul S. Mannweiler and Michael K. Phillips, to serve as cospeakers of the House.

In the Indiana Senate, the political makeup is 26 Republicans and 24 Democrats. With the Republicans holding the majority, Sen. Robert Garton was chosen as the Senate President Pro Tempore. Lt. Gov. Frank O'Bannon will preside over the Indiana Senate as the president. The Indiana Senate also will have several changes in its political makeup with a newly elected Republican caucus chairman and a new Democratic floor leader. The Senate also will see several new committee chairmen.

The new state administration under Gov. Evan Bayh will present several health-related proposals to the Indiana General Assembly for consideration.

The combination of these factors along with the nearly 250 health-related bills expected to be introduced

means this legislative session will not lack for attention.

So, let's get out our new scorecards and see if we can forecast the issues of interest to the ISMA.

Legislative Issues

While the protection of Indiana's Medical Malpractice Act is the top priority for the ISMA's lobbying team, it is anticipated that there will be no major attempts to amend the act this session. Indications from Gov. Bayh suggest that the administration sees no need to change Indiana's medical malpractice law, recognizing that it is a model law. Nonetheless, the ISMA lobbyists will be watchful for proposals to amend the act.

An issue that has been proposed in other states may arise in Indiana—mandatory assignment tied to licensure. The ISMA will be working with various interested groups to thwart this attempt to mandate acceptance of assignment under Medicare.

The ISMA will be introducing legislation to prohibit the sale of tobacco in vending machines and to prohibit smoking in hospitals and health facilities. Both of these measures are being filed in accordance with the directives from the ISMA House of Delegates. Another tobacco-related proposal expected to be filed this session would require all public buildings to have designated nonsmoking areas. This initiative will be supported by the ISMA in accordance with the ISMA goal to move Indiana toward a tobacco-free society by the year 2000.

The State Board of Health will be the subject of legislative scrutiny this session as the lawmakers debate pro-

posals from the Sunset Committee that met over the summer to review the operations of the State Board of Health and its local health departments.

Probably the most significant public policy health issue to be debated will be the expansion of the Medicaid program to 150% of the federal poverty level to cover prenatal care for pregnant women and medical care for children up to age 8 who meet these income guidelines. This program, known as "SOBRA expansion," has been recommended by the Institute of Medicine, the National Commission to Prevent Infant Mortality and various health-related organizations. The issue came to the forefront in Indiana when data were released that showed Marion County having the highest black infant mortality rate in the nation. The ISMA House of Delegates adopted a resolution supporting the expansion of the SOBRA option under Medicaid.

In the 1988 session, legislation known as the "omnibus AIDS bill" (SEA 9) was passed. This new law expanded the reporting requirements for HIV and dealt with many other issues surrounding AIDS. It is likely the lawmakers will tackle other AIDS issues in 1989 including consent for testing, which people may be required to be treated and contact tracing.

Various allied health groups will be asking the Indiana legislature to grant them licensing status and to write a scope of practice for their profession. These allied health groups (occupational therapists, social workers, radiation technologists and others) will continue to occupy a large percentage of

CONTINUED ON PAGE 37

Letter to the Editor

I am writing to discuss my disgust at reading in the October 1988 issue of *INDIANA MEDICINE* a lengthy article by a freelance writer, Betty White, entitled *Depression, etc.* on page 851 and follows. My disgust comes from the Indiana State Medical Association's Journal repeating the error that most of the popular media are guilty of, which is medical articles written by lay people with no information.

This article, which I read in some detail, is almost exclusively a "book report" of some reports from the National Institute of Mental Health. As a physician practicing in Indiana, I feel nothing but disgust reading a rehash of material from a government institution by a freelance writer who wrote it for profit in a supposed professional medical journal.

I would ask that *INDIANA MEDICINE* not publish such material, which is better suited for the tabloid press and the sensational journals at the checkout counter of most supermarkets. This is another example of government publishing something, lay people taking it to the media and then indicating that physicians don't know what they're talking about. — Arthur J. Kuhn, M.D., Munster

Legislative Session

CONTINUED FROM PAGE 36

the health care agenda. In addition, physical therapists will be seeking legislative approval of a proposal that would allow their practitioners to treat patients without a physician's referral.

Health care for the medically underserved, including proposals on how it is delivered and how it is paid for, will be another important health-related public policy measure on the legislative agenda. It is likely proposals dealing with product liability and the worker's compensation law will be debated this session. And last, but not least, the state's biennial budget will be a major priority for the state lawmakers.

In order to help you obtain up-to-date legislative information, the ISMA has installed a toll-free legislative hotline. You may call 1-800-447-ISMA to learn what is happening at the Statehouse that is of interest to organized medicine.

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1988 CONVENTION REPORT



Evan Bayh, who will become governor of Indiana this month, speaks during the IMPAC luncheon. Gubernatorial candidates Bayh, former Indiana Secretary of State, and Lt. Gov. John Mutz presented opening statements and answered questions from the audience during the program.



Dr. John D. MacDougall (second from left) is applauded after he delivered his address as president at the first session of the House of Delegates. Others are (from left) Dr. Fred W. Dahling, president-elect; Dr. C. Dyke Egnatz, speaker of the House; Dr. William H. Beeson, vice-speaker; and Dr. Helen E. Czenkusch, parliamentarian.



Speakers at the general scientific session on AIDS were (left to right) Dr. Woodrow A. Myers Jr., state health commissioner; Dr. Robert Kleiman, chief of pediatric infectious diseases at Indiana University Hospital; Dr. Robert B. Jones, Indiana University Department of Medicine, Division of Infectious Diseases; and Dr. Judith Johnson, Indiana State Board of Health. Dr. Roy Schwarz, AMA Assistant Vice-President for Medical Education and Science, also spoke.



Dr. Nicki C. Turner, a Muncie internist, received the 1988 Physician Community Service Award during ISMA's annual meeting. Dr. Turner established "Friends Who Care," a non-profit educational foundation that teaches schoolchildren about the dangers of tobacco use. The award is provided by the A.H. Robins Co.



Dr. William Golden, a trustee of the American Society of Internal Medicine, speaks on the Harvard Resource-Based Relative Value Scale.



Dr. John C. Huus of Evansville and Karen Kuhn Staley of the Indiana Society of Medical Assistants talk during a break in the section on internal medicine.



Dr. Fred Dahling assumes the role of ISMA president at the President's Night dinner.



Dr. James E. Davis, president of the AMA, signs in at the convention, assisted by Debbie Pierle of the ISMA staff (center) and Sandy Fledderjohann.



Dr. Kenneth O. Fetrow (right) of Hammond stops to talk with Ron Kiersing, the representative at the Eli Lilly/Dista exhibit.



Dr. Michael A. Litwiler of Indianapolis visits the exhibit of the Upjohn Co., which is represented by Jodi Wolfe (left) and Kellee Bognanno.



Those attending the section on internal medicine included Dr. Ramon S. Dunkin (left) of Indianapolis and Dr. George L. Alcorn of Madison.



Delegates listen to the proceedings at the House of Delegates first session.



Michael Miller (right), representing Abacus Data Systems, explains his product to Dr. Moses S. Safirstein of Fort Wayne.



Lura Stone (left), president-elect of the ISMA Auxiliary, chats with Dr. Lydia K. Mertz of Goshen at the spouse program.

Call to Order, Miscellaneous Business

The Indiana State Medical Association House of Delegates convened its 139th Annual Convention, featuring the theme "Maintaining The Balance of Medical Care," at 9:30 a.m., EST, Friday, October 21, 1988, at the Radisson, Indianapolis. The final session of the House of Delegates convened at 9 a.m., EST, Sunday, October 23, 1988. Presiding at both sessions was Dr. C. Dyke Egnatz, speaker, Schererville, assisted by Dr. William Beeson, vice speaker, Indianapolis. Dr. Helen Czenkusch, Indianapolis, served as parliamentarian. Chaplain R. Richard True, Anderson, presented the invocation.

Approval of Minutes

The proceedings of the 138th Annual Meeting of the House of Delegates, Indiana State Medical Association, conducted Nov. 6 to 8, 1987, at the Radisson, Indianapolis, and published in the January 1988 issue of *INDIANA MEDICINE*, were approved.

Election of Officers

Dr. Fred W. Dahling, New Haven, as president-elect, succeeded to the office of president. Dr. George Rawls, Indianapolis, was elected president-elect. Other elections included:

Treasurer—Dr. Max Wesemann, Franklin

Assistant Treasurer—Dr. Michael Mellinger, LaGrange

Speaker of the House—Dr. C. Dyke Egnatz, Schererville

Vice Speaker of the House—Dr. William H. Beeson, Indianapolis

Chairman, Board of Trustees—Dr. William Van Ness II, Summitville

Clerk/Chairman Pro Tem, Board of Trustees—Dr. Jack Higgins, Kokomo

At Large Member, Executive Committee—Dr. Benny Ko, Terre Haute

At Large Member, Executive Committee—Dr. Clarence Clarkson, Richmond

Election of Delegates Alt. Delegates to the AMA

The following were elected to two-year terms as delegates and alternate delegates to the American Medical Association, their terms to expire Dec. 31, 1989:

Delegates:

John Knote, M.D., Lafayette
Alvin J. Haley, M.D., Carmel
George Lukemeyer, M.D., Indianapolis

Alternates:

Shirley Thompson Khalouf, M.D., Marion

Max N. Hoffman, M.D., Covington
Edward Langston, M.D., Flora

Holdover AMA delegates and alternate delegates (terms expire Dec. 31, 1989) are:

Delegates:

Marvin E. Priddy, M.D., Fort Wayne
Peter R. Petrich, M.D., Attica
Thomas C. Tyrrell, Hammond

Alternates:

Herbert Khalouf, M.D., Marion
Martin J. O'Neill, M.D., Valparaiso
Richard Reedy, M.D., Yorktown

Standing ovations from the House of Delegates were accorded Everett E. Bickers, M.D., Floyds Knobs, and to Robert Seibel, M.D., Nashville, for their past dedicated service to the Indiana Delegation to the American Medical Association.

Elected/Re-elected Trustees, Alternates 1988-89

Trustees:

District 3—Gordon Gutmann, Jeffersonville

District 6—Clarence Clarkson, Richmond

District 7—Peter L. Winters, Indianapolis

District 9—R. Adrian Lanning, Noblesville

District 12—John R. Thomas, Fort Wayne

Alternate Trustees:

District 1—Bruce W. Romick, Evansville

District 3—Charles B. Carty, Pekin

District 4—George Alcorn, Madison

District 5—Fred Haggerty, Greencastle

District 7—Ronald G. Blankenbaker, Indianapolis

District 7—Willis W. Stogsdill, Indianapolis

District 7—Charles O. McCormick III, Greenwood

District 8—John V. Osborne, Muncie

District 9—Stephen D. Tharp, Frankfort

District 10—Frank Sturdevant, Valparaiso

District 13—Alfred C. Cox, South Bend

Also reported for confirmation to the House: Dr. Margaret Frazer, president, Resident Medical Society, by virtue of this position, is a nonvoting trustee of the ISMA Board of Trustees. The RMS president-elect, Dr. John Fallon, is the alternate trustee of the ISMA board. Each term is one year in a nonvoting capacity.

Adoption of Resolution 88-17, resolved that the Medical Student Society have a nonvoting trustee and an alternate trustee to represent the MSS on the ISMA Board of Trustees, both elected by the members of the MSS during its annual meeting. The term of office is one year in a nonvoting capacity. The student trustee is Marc Duerden; the student alternate trustee is Clint Myers.

Future Meetings

1989	Westin	Oct. 27-29
1990	Radisson	Nov. 2-4
1991	Westin	Nov. 8-10
1992	Westin	Nov. 13-15
1993	Radisson	Nov. 5-7

1988 ISMA Journalism Award Winners

Print Single Story—Susan Guyett, *Indianapolis Woman* magazine, "Women's Health Through the Decades."

Print Series—June Remley and Diane Carmony, *Fort Wayne Journal-Gazette*, "Ohio Shooting Triggers Debate on Life & Death."

Radio—Jerry Castor, WTTS/WGTC, Bloomington, "Alcohol—The

Accepted Drug" and Gene Stewart, WIKY AM & FM, Evansville, "AIDS: Issues and Answers."

Television Single Story—Betsy Ross, WTHR-TV, Indianapolis, "A Day in the Life of Riley."

Television Series—Mary Mysliwiec, WLFI-TV, Lafayette, "Heart Disease."

Print Single Story—Student

Division—Thomas Olafson, *Indiana Daily Student*, "Alcohol Scars a Past, Taints a Future."

Print Series—Student Division—Sarah Mawhorr, *Indiana Daily Student*, "Domestic Violence: An American Tradition."

In Memoriam

Tribute to members of the Indiana State Medical Association who have died since the 1987 session.

Joseph H. Baltes, M.D., Fort Wayne
Frank B. Bard, M.D., Crothersville
Marion H. Bedwell, M.D., Sullivan
A. W. Bloom, M.D., Kelleys Island, Ohio
Clyde G. Botkin, M.D., Muncie
Archie E. Brown, M.D., St. Petersburg, Fla.
William M. Browning, M.D., North Vernon
Raymond H. Burnikel, M.D., Evansville
Truman E. Caylor, M.D., Bluffton
William R. Clark Sr., M.D., Fort Wayne
Avery L. Coddens, M.D., Fowler
Thomas A. Cortese Sr., M.D., Indianapolis
Chris W. Cullnane, M.D., Evansville
Elmer T. Cure, M.D., Muncie
Dale A. Davidson, M.D., Indianapolis
Albert M. De Armond, M.D., Tucson, Ariz.
George L. Derhammer, M.D., Monticello
Walter A. Dycus, M.D., Evansville
Palmer O. Eicher, M.D., Indianapolis
Thomas A. Elliott, M.D., Elkhart
John T. Emhardt, M.D., Indianapolis

Frank J. Enderle, M.D., Terre Haute
Helen L. Finley, M.D.
Edson C. Fish, M.D., South Bend
Theodore C. Fong, M.D., Madison
Joseph M. Gilson, M.D., Indianapolis
Sidney R. Goldstone, M.D., Munster
Teodoro G. Guevara, M.D., Marion
George M. Hamilton, M.D., Fort Wayne
Roscoe C. Henderson, M.D., Indianapolis
Russell S. Henry, M.D., Indianapolis
John E. Heubi, M.D., Indianapolis
Peter B. Hoover, M.D., Boonville
John S. Huoni, M.D., West Bay, Fla.
David K. Johnloz, M.D., Bloomington
Stephen L. Johnson, M.D., Evansville
Robert B. Kessler, M.D., Evansville
Bennett Kraft, M.D., Sarasota, Fla.
Clarence A. Laubscher, M.D., Evansville
Milo O. Lundt, M.D., Edwardsburg, Mich.
William R. Maurer Jr., M.D., Schererville
Fred R. McCrea, M.D., Terre Haute
George A. McDowell, M.D., Fort Wayne
Thomas O. Middleton, M.D., Bloomington
Richard T. Nolin, M.D., Carmel
William H. Norman, M.D., Marco, Fla.

Max S. Norris, M.D., Indianapolis
Carroll O'Rourke, M.D., Fort Wayne
Andrew C. Offutt, M.D., Indianapolis
Harley P. Palmer, M.D., Franklin
Vernon K. Pancost, M.D., Elkhart
Richard K. Parrish, M.D., Decatur
Alexander Y. Pipa, M.D., Chicago, Ill.
Floyd T. Romberger, M.D., Indianapolis
Donald F. Roney Jr., M.D., Union, Ky.
C. D. Salas, M.D., New Castle
Robert H. Schirmer, M.D., Evansville
Victor V. Schriefer, M.D., Evansville
George E. Scott, M.D., Indianapolis
Marshall H. Seat, M.D., Washington
Hiram T. Sexson, M.D., Indianapolis
Charles E. Sheets, M.D., Manilla
George H. Springstun, M.D., Sullivan
Anna L. Turner, M.D., Madison
William C. Van Ness, M.D., Summitville
Elaine M. Vlaskamp, M.D., Muncie
Jack G. Weinbaum, M.D., Terre Haute
Wendell A. Weller, M.D., West Lafayette
Roger F. Whitcomb, M.D., Shelbyville
Stanley G. Zallen, M.D., Munster
Ralph E. Zwickel, M.D., Newburgh

Dr. Fred W. Dahling Inaugurated As ISMA President



Dr. Dahling

Dr. Fred W. Dahling, a New Haven family practitioner, was sworn in as president of the Indiana State Medical Association Oct. 23 during the final session of the 139th House of Delegates.

Dr. Dahling succeeded Dr. John D. MacDougall, a Beech Grove surgeon, as president of the ISMA. Dr. Dahling has served as ISMA vice-speaker and speaker of the House. He is also a former chairman of the ISMA Board of Trustees.

Dr. Dahling graduated from the Indiana University School of Medicine in 1956 and established his private practice in 1961. He is on the staffs of

Lutheran and Parkview Memorial hospitals in Fort Wayne. He is certified by the American Board of Family Practice and is a former president of Lutheran Hospital, the Allen County Medical Society and the Alumni Council, Indiana University School of Medicine.

Dr. Dahling has been an ISMA delegate since 1970 and has served on Reference Committees, the Commission on Public Relations, the IMPAC board, the Commission on Legislation and an ad hoc committee on malpractice.

Dr. George H. Rawls Chosen President-Elect

Dr. George H. Rawls, an Indianapolis surgeon, was chosen president-elect of the Indiana State Medical Association Oct. 23 during the 139th annual convention in Indianapolis.

Dr. Rawls was elected by the House of Delegates during the final session of the House. He will become president of ISMA during its convention in October 1989.

Dr. Rawls is a 1952 graduate of Howard University School of Medicine

and a former president of the Marion County Medical Society and has served as an ISMA delegate, assistant treasurer and treasurer. He is a member of the American College of Surgeons, the American Society of Abdominal Surgeons and is certified by the American Board of Surgery. Dr. Rawls also wrote *The Surgeon's Turn*, his personal account of serious illness and major surgery.



Dr. Rawls

Mr. Speaker, fellow officers, delegates and friends: One year ago I stood at this podium and spoke to you about some priorities for the coming year. The year, it seems to me, has passed very quickly, and we have accomplished only some of what I had hoped. My feeling about this perhaps is best characterized by the old, oft-repeated chestnut attributed to Winston Churchill. As he presided at a meeting, some of his remarks were offensive to Lady Astor and she thought that she detected on his person the aroma of brandy, whereupon she strode to the wall and drew a horizontal mark at shoulder height and remarked "Winston, if all the brandy you have drunk in your life were poured into this room, it would reach this level." Churchill looked at the mark, looked at the distance to the floor and the distance to the ceiling and said "So much accomplished, so much left undone." I believe we have accomplished more this year than we have left undone, and fortunately we have continuity of leadership in this association and progress will continue.

Last year I emphasized that my first opportunity was to carry out the policies enunciated by the House of Delegates in its resolutions, and this has largely been done with one notable exception, which was last year's resolution 87-22. This was the resolution which called for the establishment of a statewide network of insurance performance review committees, and although this resolution was not adopted, it was referred to the Board of Trustees. Because of the fiscal impact of the resolution, it was properly referred to the Executive Committee, which is the financial committee of the association. During the past year, more effort and attention have been given to this issue by the Executive Committee than any other single issue. I will not take time this morning to explain the lengthy and involved process which has continued through the year, but suffice it to say that progress has been made on this issue and I believe we are

close to a satisfactory implementation.

In a related issue, a proposal was made to our state legislature to consider forming an Insurance Oversight Committee to monitor the insurance companies who serve as the fiscal intermediaries for Medicare. For a number of sound reasons, our Board of Trustees opposed the formation of such a committee. As an alternative, a series of meetings of physicians and their representatives together with the executives at Blue Cross/Blue Shield responsible for Medicare affairs was proposed and these are being expanded to include representatives of senior citizens groups and interested members of the legislature. The second of these meetings was held on October 7th and I believe that considerable progress was made resolving some of the difficult problems that have been experienced in Medicare reimbursement.

A second priority of mine this year has been membership. Telethons were held in the 10th and 12th districts, soliciting non-member physicians, and we have significantly increased our membership during the year and we are continuing our efforts in this important area.

Another important priority was that of legislation. Our Commission on Legislation, under the able leadership of Dr. Ed Langston, was very active during the annual session of the General Assembly. Together with our Department of Government Relations directed by Julie Newland, the bills which we favored regarding health issues were enacted. These included the bill prohibiting the use of anabolic steroids in high school athletes and the comprehensive AIDS bill, which has enabled the State Board of Health to pursue vigorously its program for combatting this serious threat. A proposal which would have amended our Patients Compensation Act in such a way to have allowed the Medical Review Panel process to be circumvented in some instances was soundly defeated after a vigorous lobbying effort in which many of you participated.

Another interest of mine during the past year was to increase our support of IMPAC and AMPAC, the political action committees of our state association and the AMA, respectively. I am happy to report that, under the leadership of our IMPAC Chairman, Dr. Everett Bickers, we have had an increase in sustaining membership, and we now rank 11th among the fifty states in PAC membership. I will repeat here and now what I have said at many district meetings: that support of this effort is so important that I would like to see every physician present in this room and his or her spouse be sustaining members of IMPAC and AMPAC. The cost of this is \$200 per year or 54 cents a day and I don't know of any physician here present who cannot afford that. If you should happen not to be among this esteemed membership, I invite you to take your checkbook out of your pocket now and write a check for \$200 to IMPAC and AMPAC and hand it to Mr. Richard King, our executive director, who will see that you and your spouse are properly enrolled as sustaining members. I will take one moment to ask for your continuing support of PICI, the Physicians Insurance Company of Indiana. This is your company, it is physician-owned and directed, under the able leadership of the board chairman, Dr. Paul Siebenmorgan, and the executive vice-president, Mr. David Duncan, and it is dedicated to vigorous support of physicians in all professional liability actions. Its rates are competitive and its track record is outstanding. It now insures over 2,000 physicians in Indiana and if you are not one of them, I recommend it for your consideration.

I would like to extend my personal thanks to all the physician members of the commissions and committees and especially the chairmen of these commissions for their participation during the past year. In addition to Dr. Langston, whom I previously mentioned, my special thanks are extended to Dr. Helen Czenkusch, who chaired the Commission on Constitution and

Address of the President

Bylaws, Dr. Fred Blix for his leadership of the Commission for Physician Assistance and Dr. Adrian Lanning, who chaired the Commission on Public Relations. I also wish to thank Dr. Alfred Cox, who chaired the important Commission on Medical Services, and special thanks to Dr. Virginia Wagner for chairing the ad hoc committee which Dr. Cox appointed to address the problem of lack of health care for many of our pre-school children and which resulted in a late resolution titled Healthcare for Children, Ages 0-8, in The State of Indiana, which will be considered at this meeting. I would like to thank Dr. Blankenbaker for chairing the Commission on Sports Medicine and Dr. James Carter who, on rather short notice, agreed to assume the chairmanship of the very important Commission on Medical Education. Dr. Carter appointed a subcommission to work with Dr. Paul Muller to provide a program of remedial education as an alternative to sanction by Peervue, and we are indebted to Dr. Glenn Bingle for chairing the subcommission as well as for his chairmanship of the Commission on Convention Arrangements.

I especially want to thank the physician members of the Executive Committee and the Board of Trustees, under the very capable chairmanship of Dr. Michael Mellinger, for their hard work and active contribution to the process of creating and implementing the policies of our organization and their patience in helping resolve some of the more difficult and entangled problems.

I should like to recognize the diligence and effectiveness of our AMA Delegation members who, under the leadership of their chairman, Dr. Marvin Priddy, effectively presented Indiana's point of view on major issues

both at the interim meeting last December and the annual meeting last June.

And lastly, and perhaps most importantly, I would like to extend my personal thanks to each of the members of our ISMA staff who, under the most inspiring leadership of our executive director, Mr. Richard King, and his associate executive directors and department heads, have made the work of the association a distinct pleasure and who have contributed so much to our successful year. In addition to Ms. Newland, whom I mentioned earlier, I would like to thank Adele Lash, our director of communications, and commend her for her important work with Ms. Newland in organizing our Medicare Assistance Program pilot project in Montgomery County. I thank Michael Huntley, our director of member services, who also serves as our capable pilot and in whom we entrust our lives night and day and in clear and unclear weather. I thank John Wilson, our director of finance, who has worked closely with our distinguished treasurer, Dr. George Rawls, to keep us well informed about our financial status. Mr. Ronald Dyer, our general counsel, has served us well throughout the year and has been especially helpful in our recent meetings with the Blue Shield representatives.

Special thanks are due to our field representatives, Bob Sullivan, Richard Ryan and Janna Kosinski; our indispensable executive assistants, Susan Grant and Mary Alice Cary; and our ever lovable Rosanna Iler, who knows more doctors and their wives than anyone in Indiana and who works so hard on membership and shepherding our auxiliary.

I certainly want to include in our thanks Dana Wallace who keeps the

computer running, Tom Martens who supervises our health insurance program and coordinates Continuing Medical Education, and Carolyn Downing who attends to the Resident Medical Society and the specialty societies.

I would like to offer a special tribute to Martin Badger who, under the direction of the editor, Dr. Frank Ramsey, has made our monthly journal, *INDIANA MEDICINE*, a publication of the first order of which we are very proud.

As I mentioned earlier, it was with great foresight that the early leaders of our association provided in the Constitution and Bylaws for a continuum of leadership so that policies and programs which are initiated during one presidential year can be continued and strengthened in subsequent years. We will shortly inaugurate a new president of the association who will assume the office with as thorough a preparation and background and is as well equipped for leadership as any president we have had in our past. Dr. Fred Dahl-ing has served in leadership roles throughout his professional career and has gained much experience as vice-speaker and speaker of this House of Delegates, and he has been a vigorous participant in our leadership as president-elect during the past year. We look forward, with great expectation, to his vigorous leadership during the forthcoming year and I pledge him my unswerving support as I will remain a member of the executive committee as immediate past president during the next year.

And now for the honor of being allowed to serve as your president during this past year, I extend my warmest personal thanks to each member of this House of Delegates which, as a body, I hold in such high esteem. Thank you very much.

"The profession can be secured best by unity from within the profession itself."—Fred W. Dahling, M.D.

During this past year, it has been my duty and always my pleasure to represent this association as its president-elect. This has required attendance at many meetings, conferences and seminars. It has mandated travel from California to the District of Columbia, with many miles traveled inside our Hoosier state. These have been interesting, productive and always happy miles, traveled on your behalf.

Upon reflection, it seems to me that one constant theme has emerged despite the variety of subject material considered on these occasions. That theme can be best described as analogous to the opening lines in Dickens' novel, *A Tale of Two Cities*: "It was the best of times. It was the worst of times."

Indeed, this is medicine's best of times. Over the last three decades, the art and science of medicine has advanced beyond our wildest dreams. It has progressed to a point that was unthinkable and unimaginable a generation ago. One hundred years ago, a stab wound to the heart was a fatal injury. Today, the skillful surgeon's scalpel incises and dissects the heart and the patient lives. He not only survives, but in most instances he continues to live an active and productive life afterwards. In 1931, when I was born, the average life expectancy for a male was about 57 years, my age today. An American male born today has a life expectancy of more than 70 years. The leading killers of a generation ago, heart disease, stroke and cancer, have been thwarted; and in some cases, there has been a cure effected. Infectious diseases are no longer the scourge that once decimated entire populations. Small pox has been eradicated. There are few cases of polio. Although we are now faced with the medical problems associated with accidents, substance abuse and the catastrophe of AIDS, this is truly the "Golden Age" of medicine.

On the other hand, the environment in which the family and house of medicine finds itself is at its worst. Today, that environment is one of gloom and despair. Today's medical environment is fostered by the mischief created in our legislatures and Congress. Since the beginning of the socialization of our profession in 1965, the socioeconomic environment seems to be increasingly menacing and inhospitable. Many of our fellow practitioners believe that this is the beginning of the end of our proud profession. While it is true that our present perceived problems with big business, big government, the insurance and hospital industries are tall obstacles to hurdle, the future questions of quality of care, mandatory CME, competency testing and mandatory assignment are more formidable problems yet to be addressed. I feel that medicine still possesses the self-reliance and the self-discipline which will be required to overcome these problems.

Physicians are not unlike snowflakes. They come in many sizes, shapes and forms. By themselves, they finally melt away with time and have no lasting effect. But together, they can cover the field of medical endeavor, can be driven into drifts of solidarity and can possess the power of an avalanche when disturbed. The key to the solutions of our problems may well be related to a single word: UNITY. There is strength in unity. In union, we can make a difference. We can make a difference for our patients, for our profession and for our individual selves.

UNDERSTANDING. Unity can be thought of comprising five integral parts. The first part is understanding. We have to understand that our present circumstances are not so much a consequence of the popular fad of doctor bashing as it is the fact, as I see it, that there is envy of the power which we collectively and individually possess: the power of our independence; the power that we hold to influence other people; and the power to make reasonable and meaningful deci-

sions. We have to understand that good decisions have to be made by good physicians. A good physician is one who treats people as individuals. A good physician is one who studies. A good physician is one who knows that problems and their solutions are not simple. A good physician is one who is aware of unintended consequences. We have to understand that our profession is undeniably essential to the care of humanity and cannot be replaced.

NURTURING. The second part of unity is nurturing. Nurturing means to nourish. Nurturing means to grow. To grow and to flourish requires the correct ingredients. One of those ingredients is recruitment. The applicant pool of highly qualified applicants to our schools of medicine is shrinking. Medical school classes are contracting. Medicine is now competing with other career choices that young men and women are considering. To stay healthy, our profession has to have an adequate supply of highly qualified and properly motivated men and women to enter our training programs to replace those of us whose professional careers are nearing their end. We should all promote our profession whenever there is a chance to do so.

Another ingredient to proper nurturing is our responsibility to advance the profession through teaching. The old adage to learn one, do one, then teach one has always been a good one to follow. Although teaching facilities and methods have grown very sophisticated over time, we should never shirk our responsibility to avail ourselves to our students and residents. If we fail to do this, we do nothing to advance medical knowledge.

A third and important ingredient for nurturing is to continue to study and learn. The practice of medicine means precisely that. The vast body of knowledge in medicine exponentially expands with the passing of each year. To keep up with new advances and techniques could be a full-time job. The good physician should want to study and learn. If he doesn't, then required

Address of the President-Elect

continuing medical education tied to licensure won't be far off.

INTEGRITY. The third part of unity is integrity. Integrity brings to mind those qualities consisting of honesty, soundness, uprightness and unimpaired state, a state of being complete and undivided. Every day that we practice, our integrity is faced with compromising situations. Pressures to change a diagnosis, to extend a disability without good reason, to shorten a treatment or hospital stay are all common, everyday occurrences in the present day practice. Attempts to recruit us into different delivery systems that really may not be to the best advantage to our patients are not unfamiliar to us. If what we do is right for the patient, then our professional integrity will not be compromised. Patient advocacy is a responsibility that we should not shun.

TRUSTWORTHINESS. The fourth component of unity is trustworthiness. Without integrity, one cannot become trustworthy. A successful medical career can only be attained with the trustworthy component. To become trustworthy requires time. Trustworthiness is the result of being dependable, of being honest, and of being temperate and considerate. If we cannot attain the state of trustworthiness, then our profession's attempts to influence the events that affect us will be of no value.

YEOMANSHIP. And finally, the last part of unity is yeomanship. Historically, a yeoman was an attendant, especially a gentleman attendant in a royal or noble household. He was subordinate in rank. He usually performed menial tasks. He was a common man of a most respected class. He was a man free-born. And doesn't this describe what we all would like to have a physician aspire to be? A man of common birth who with a free will has decided to serve a most noble cause, the relief from the pain and suffering which his fellow man endures.

I firmly believe that unity and its five component parts (i.e., understand-

ing, nurturing, integrity, trustworthiness and yeomanship) will lend itself to the preservation of our profession. And to that end, I would like to finally make the following recommendations:

1. **FINANCE.** Our last year's budget was at just under \$2 million. With our present dues structure, our income from dues has not met our needs for several years. The shortfall has been made up from non-dues income derived mostly from investment income from our reserves. In the last few years, our reserves have been cut dangerously low in order to continue mandated services to our members. By 1992, our operating expenses are estimated to increase another \$500,000 and will be just under a total of \$2.5 million. The leadership of this association feels that to maintain solvency, our non-dues income must increase and that we also should have at least one year's operating expenses in reserve as a cushion. To accomplish these objectives, this House has before it a dues increase program to consider. The program calls for a \$50 increase next year and a \$25 per year additional increase over the next three years so that in four years, the total increase would amount to \$125. The dues would increase from the present \$235 to \$360 per year four years hence. It is felt that this plan would give us the necessary funds to continue and to expand any future services and also would build our reserves to just under \$3 million. I endorse this financial plan and I strongly urge you to consider implementing this dues increase and to earmark at least one dollar of the increase as an addition to the amount already budgeted for the auxiliary.

2. **ADVOCACY.** Over the past several years, we have had a working liaison with the Federation of Older Hoosiers. This has been an excellent vehicle in which to promote patient advocacy. This relationship must continue and expand where possible. Also at the present time, we now have a pilot study going on in a selected county to explore the idea of a

Medicare courtesy card program. If it proves to be acceptable to both patients and physicians, it could become available throughout the state.

But there is another advocacy that has to be considered, and that is physician advocacy. In the last several months, the extreme frustrations of physicians over third party payors, and more specifically those of the government plans, have risen to the boiling point. Insurance review programs and patient advocacy committees have been tried and found to have some success in one of our county societies. This program could be implemented on a statewide basis, and in the next year, it is my desire that this may be completed. Coordination and direction can and should come from your state medical association. Additionally, monthly meetings with the governmental carriers have been started at the state level to consider global problems in the various governmental plans. As long as these meetings progress positively, I believe that they should be continued.

3. **PHYSICIAN'S ASSISTANCE.** The Physician's Assistance Program has now developed to the point that the Physician Recovery Coordinator position has been filled. A more unified and coordinated statewide program should be in place over the next several months. Another facet of physician assistance has to do with more than physician recovery and rehabilitation. I would like to eventually see this program expand, maybe with the help of the auxiliaries, to help relieve stress experienced by the physician and his family members. Conceivably, this could be achieved through interested physician and spouse volunteers at the local county medical society level not unlike the program in Allen County.

4. **LEGISLATIVE ACTION.** The legislative department of this association has been developed into a highly productive and smooth running enterprise over the years. What is needed is continued physician and spouse input and involvement. The Key Contact

Address of the President-Elect

Program is one method to this end. One goal this next year is to gain more physician and spousal activity in this program.

5. POLITICAL ACTION. Political involvement is necessary for the survival as much as we may detest such participation. New players will be on the field in the next two weeks. A new

inning of challenge will begin. One way for us all to participate at this level is to actively join our political action committees, AMPAC and IMPAC. You can't get a "bigger bang for your buck." Participation in the PAC and becoming individually active with your own candidates and elected officials will ensure that the profession has a clear and

strong political voice.

This next year promises to be a most exciting and challenging one. I am looking forward to it. With your forbearance, aid and prayer, we will be successful at whatever we choose to do. Thank you for affording me the opportunity of serving you and our profession.

Address of the President, ISMA Auxiliary

Ann Wrenn

Charles Dickens' classic, *A Tale of Two Cities*, opens with a phrase that could describe the age in which we live.

At the very least, his "It was the age of wisdom, it was the age of foolishness; it was the spring of hope, it was the winter of despair" scenario could be used to describe today's medical environment.

For at a time when the physicians in Indiana, indeed across this nation, are providing the best medical care in the world, much of the public thinks they are self-serving—more committed to the quantity of compensation than to the quality of patients' care. At a time when technology fosters progress never dreamed of, scientific knowledge is pitted against ethical questions never thought of, let alone asked. At a time when organ transplants offer new life to the dying, a suit-happy society no longer accepts that some babies are born deformed and some diseases cannot be cured, or that the natural process of aging will inevitably end all of our lives. At a time when people are living longer, healthier lives than ever, the government imposes increasing restrictions that let cost dictate the limits of care. At a time when we have conquered most of the killing childhood diseases, we are faced with the dread specter of AIDS with no vaccine or cure in sight while animal rights

and welfare groups are waging a radical campaign against biomedical research.

The pressure these issues bring give us no cause to wonder why impairment is a problem for some physicians, why medical families face so much stress, why many physicians are leaving the profession to which they had committed their lives. If ever you need our support, it is now. If ever our communities needed our health advocacy, it is now. If ever the medical family needed our encouragement, it is now.

The Auxiliary has what it takes to confront these difficult issues. It is the potential that is within the AMA Auxiliary and the ISMA Auxiliary that will make a difference.

The best and worst scenario I sketched a moment ago makes clear the overriding challenge to physicians today. That is, to maintain excellence in patient care in the face of complexity and uncertainty, from overregulation and competition. You must deal in your day-to-day practices with concerns other than the well-being of patients. Whether this is right or wrong is not debatable. It is real.

Equally real is the Auxiliary's commitment to unleash our potential to help you maintain the quality care to which patients have become accustomed.

As medical policy and decisions are increasingly made by legislative bodies, we must continue to educate physicians' spouses about the issues so they will be knowledgeable and ready to become involved in the crucial legislative process. The increasing efficiency and effectiveness of our legislative contact systems has shown us what we can do on such issues as changing the Indiana Malpractice Act and mandatory assignment. But as ethical issues increasingly become a focus in medical care, we must be prepared to face them. As professional liability concerns continue to plague the medical profession, we must renew our efforts. As an increasingly aging population looks to government to solve all of its health problems, we must be ready to act.

Beyond legislative action there is another way we can help to maintain excellence in medical care . . . and that is by renewing our commitment to medical education through support of AMA-ERF. Support of this foundation, our only philanthropic endeavor, becomes even more critical if medicine is to continue to attract the brightest minds so that the tradition of excellence for which you have worked so hard continues to be the norm.

We have begun a new program this year and it is called the Medical Stu-

Address of the President, ISMA Auxiliary

dent/Physician Mentor Program. The purpose of this program is to provide an opportunity for the freshman student to visit with the physician and his family in a nonmedical setting. Invite the student for dinner, to a ball game, to a picnic! So far, the response on the part of the students has been fantastic. Now we are waiting for you to adopt these students.

Renewed commitment is also needed to promote good health in our Indiana communities. But there are new challenges before us. One is the decline in adolescent health. The Auxiliary's efforts in this area have brought us deserved recognition in the past year as we joined the AMA in its initiative to prevent teen substance abuse, pregnancy, suicide, victimization and violence. But, the problems that plague our youth have deep and complex roots that do not respond to simple solutions. Our renewed commitment is needed

now to ensure that every child in this state gets a healthy start on life. Finding a way to provide AIDS education for both youth and adults is another source of concern. We would be naive to assume that people understand the truth about this dread disease. We want to help make people aware of how to prevent the disease.

Substance abuse is also a problem that needs our continued attention. Again, no matter how hard we try . . . no matter how plain we make the message, we can never assume that the truth has gotten through. We must continue to alert youth and adults alike that abuse of tobacco, alcohol and drugs shortens lives and threatens health. For while we cannot stop people from using these substances, we can vow that no one in Indiana goes to his or her grave without knowing their dangers.

These are tough issues, and they are

real in these best and worst of times. Your president, Dr. MacDougall, has made every effort to include the Auxiliary in the ISMA activities this past year. Dr. Dahling, your incoming president, has already met with the Auxiliary to make plans for the coming year. We appreciate and welcome the opportunity to be advocates for medicine in Indiana.

I have said and I believe that we live in uncertain times. But, I also believe that if we look over and above our current situation, we will see a future in which quality health care is available to every Hoosier.

Let us begin to lay the groundwork for that future today by renewing our commitment to unleash the potential within us and our organizations to make the needed difference.

Thank you.

Annual Report, Medical Student Section

Marc E. Duerden, Chairman

As the Medical Student Section (MSS) entered its fourth year, it continued to change into a dynamic and active organization. After years of effort on behalf of the Indiana delegation to the American Medical Association, a new resolution was passed at A-88 that will now allow the ISMA-MSS to increase its voting power from one vote to nine votes. Under the old bylaw, each medical school in the United States was allowed one delegate and one alternate delegate to represent that school at the national AMA-MSS conventions. The new resolution will allow each medical school with students at regional centers for one year or more to have students from those centers send one delegate and one alternate delegate to represent that school at the AMA-MSS conventions.

Indiana has eight regional centers, and plans called for these centers to quickly develop their MSS programs to be able to send delegates to the interim meeting last December. Twelve students were able to attend the December AMA-MSS meeting to represent Indianapolis and six of the regional centers. The delegation was led by junior Clint Myers.

The MSS also wants to help assist in the growth of organized medicine at the state level. We have student representatives on various ISMA commissions. This year we also were asked to participate in an additional commission, the commission on medical education. The medical student viewpoint is unique from others in medicine and could potentially provide alternative complementary ways to approach situations.

At the annual ISMA meeting Oct. 21-23, 1988, the MSS received approval to have a non-voting trustee and an alternate trustee represent the MSS on the ISMA Board of Trustees. These students will be elected to a one-year term by the medical students at their annual meeting. We look forward to the greater responsibility the students have been given by the ISMA House of Delegates and the ISMA Board of Trustees.

The MSS also has continued to provide service to the community through two educational activities. The first program is called Student-to-Student. This program provides medical students the opportunity to visit high school, junior high school and elementary school classes and talk about the effects of the use of alcohol, tobacco

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MSS REPORT

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and illegal drugs. This program has approximately 50 volunteer students and is under the direction of senior Todd Rowland and freshman Robin Zon.

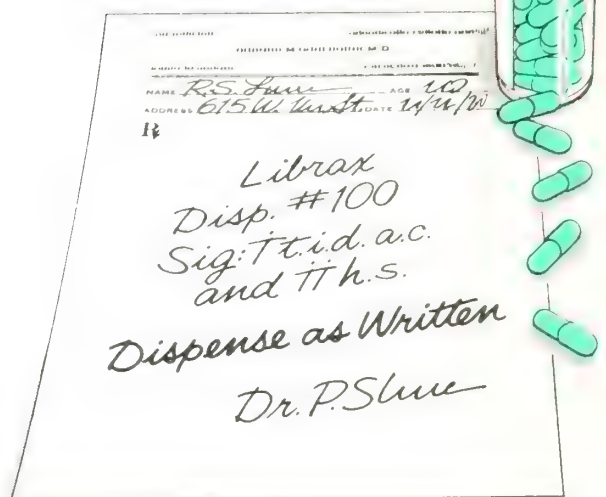
The second program the MSS has undertaken is the AIDS program. This group is working closely with the Indiana Department of Education's Dr. Leah Ingraham to develop a program that will allow the medical students to discuss AIDS with other students to provide accurate information about AIDS while being sensitive to the emotional, psychological and social aspects of the disease. The director of this program is sophomore Randy Woods.

In order to finance this growing organization, a plan was developed to market white lab jackets to the medical students. The jackets will be embroidered with a patch of the Indiana University School of Medicine. This project was coordinated by the MSS treasurer, sophomore Chuck Swanson.

It has been an honor to represent the MSS for this past year, and I would like to thank all the medical students for their efforts throughout the year.

Specify Adjunctive.

LIBRAX®



Each capsule contains 5 mg chlordiazepoxide HCl and 2.5 mg clidinium bromide.

Please consult complete prescribing information, a summary of which follows

* **Indications.** Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows: "Possibly" effective as adjunctive therapy in the treatment of peptic ulcer and in the treatment of the irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis. Final classification of the less-than-effective indications requires further investigation.

Contraindications: Glaucoma, prostatic hypertrophy, benign bladder neck obstruction, hypersensitivity to chlordiazepoxide HCl and/or clidinium Br.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants, and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).

Usage in Pregnancy. Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy. Advise patients to discuss therapy if they intend to or do become pregnant.

As with all anticholinergics, inhibition of lactation may occur. Withdrawal symptoms of the barbiturate type have occurred after discontinuation of benzodiazepines (see Drug Abuse and Dependence).

Precautions: In elderly and debilitated, limit dosage to smallest effective amount to preclude ataxia, oversedation, confusion (no more than 2 capsules/day initially, increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider pharmacology of agents, particularly potentiating drugs such as MAO inhibitors, phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions reported in psychiatric patients. Employ usual precautions in treating anxiety states with evidence of impending depression, suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation reported very rarely in patients receiving the drug and oral anticoagulants, causal relationship not established. Inform patients to consult physician before increasing dose or abruptly discontinuing this drug.

Adverse Reactions: No side effects or manifestations not seen with either compound alone reported with Librax. When chlordiazepoxide HCl is used alone, drowsiness, ataxia, confusion may occur, especially in elderly and debilitated, available in most cases by proper dosage adjustment, but also occasionally observed at lower dosage ranges. Syncope reported in a few instances. Also encountered: isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent, generally controlled with dosage reduction, changes in EEG patterns may appear during and after treatment, blood dyscrasias (including agranulocytosis), jaundice, hepatic dysfunction reported occasionally with chlordiazepoxide HCl, making periodic blood counts and liver function tests advisable during protracted therapy. Adverse effects reported with Librax typical of anticholinergic agents, i.e., dryness of mouth, blurring of vision, urinary hesitancy, constipation. Constipation has occurred most often when Librax therapy is combined with other spasmolytics and/or low residue diets.

Drug Abuse and Dependence: Withdrawal symptoms similar to those noted with barbiturates and alcohol have occurred following abrupt discontinuance of chlordiazepoxide, more severe seen after excessive doses over extended periods, milder after taking continuously at therapeutic levels for several months. After extended therapy, avoid abrupt discontinuation and taper dosage. Carefully supervise addiction-prone individuals because of predisposition to habituation and dependence.

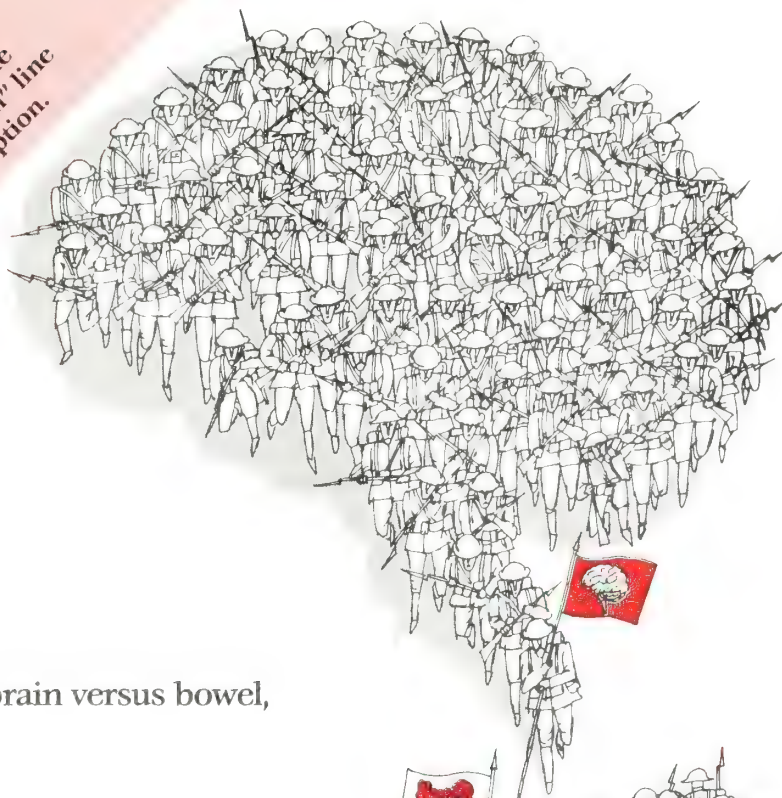
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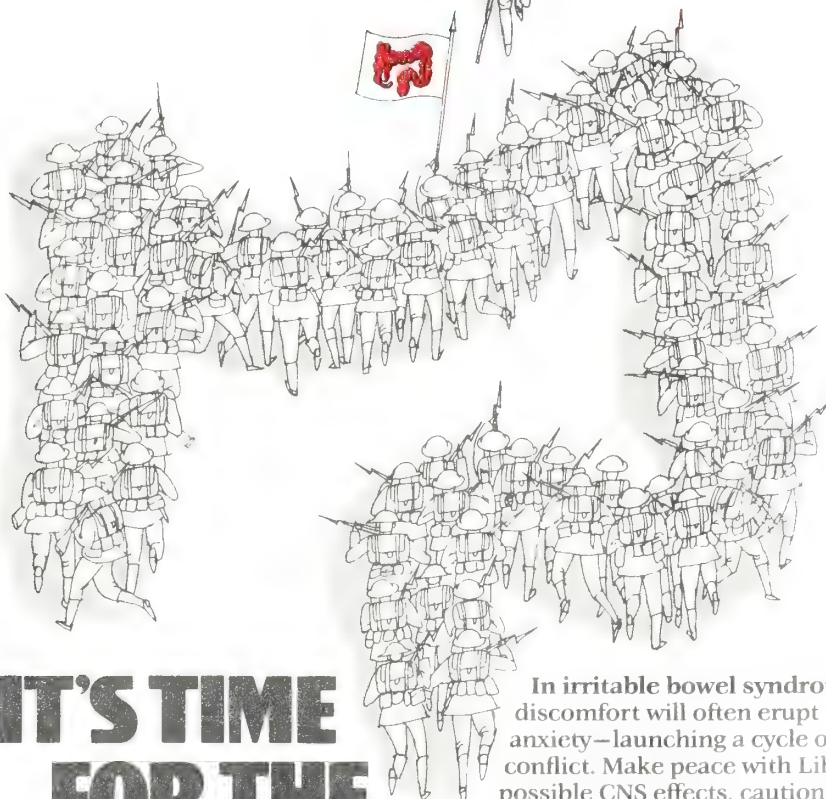
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In irritable bowel syndrome,* intestinal discomfort will often erupt in tandem with anxiety—launching a cycle of brain/bowel conflict. Make peace with Librax. Because of possible CNS effects, caution patients about activities requiring complete mental alertness.

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Scientific Exhibit Winners

First Place

GABA Neurons and Hypertension

Exhibitors: Anthony R. Zappia, Bang H. Hwang and Zhong Jing Yang, Terre Haute Center for Medical Education.

Gamma aminobutyric acid (GABA) is a major inhibitory neurotransmitter in the brains of mammals and has been shown to exert considerable influence in the neuronal control of cardiovascular function. This study was designed to investigate which specific brain regions are related to cardiovascular control.

Twenty male Wistar rats, which had undergone unilateral nephrectomies, received either deoxycorticosterone acetate (DOCA) treatment for the experimental group or sesame oil injection for the control group, twice a week for one week or four weeks (4W). The experimental rats drank a 1% NaCl solution while the control rats drank tap water. The animals were processed for immunocytochemical localizations of GABAergic terminals using antibodies to glutamic acid decarboxylase. It has been well documented that DOCA-NaCl induces hypertension as exhibited by the hypertrophied hearts of the DOCA-NaCl animals.

The following structures were studied: (a) medial preoptic nucleus (MPO), (b) lateral septum (LS), (c) suprachiasmatic nucleus (SCN), (d) paraventricular hypothalamic nucleus (PVN) and (e) nucleus tractus solitarius.

Our results show GABAergic terminal densities in the MPO, LS, SCN and the area lateral to the PVN were significantly increased in 4W DOCA-NaCl animals, as compared to 4W controls. This study has thus provided new evidence to support the concept that central GABAergic neurons may be associated with the pathogenesis of salt-induced hypertension.

Second Place

Anti-Bromodeoxyuridine and DNA Synthesis

Exhibitors: Rosalie McBride and Dr. Robert Bigsby, Indiana University School of Medicine.

Incorporation of tritiated thymidine (3H-TdR) into DNA during S-phase of the cell cycle can be monitored by autoradiography; this process involves a three to five week photographic exposure period. Bromodeoxyuridine (BrdU), a thymidine analog, has been used immunohistochemically to demonstrate DNA synthetic activity; this technique requires one day to immunohistochemically stain the tissue.

We performed experiments to demonstrate the validity of using BrdU instead of 3H-TdR to determine endometrial epithelial response to estrogen and progesterone. In mice, BrdU dosage ranging from 25 mg/kg to 200 mg/kg gave consistent results. In the use of BrdU in experiments in which neonatal uterine tissue was grafted, both host and graft gave results comparable to those obtained by 3H-TdR autoradiography. The bromodeoxyuridine method was found to be cost effective, but it took six and one-half hours more technician time. This is a reasonable trade-off because results are obtained in six days using BrdU, compared to 34 days using 3H-TdR.

Thus, BrdU is a valid alternative to 3H-TdR for future experiments designed to examine the effects of hormones on xenografts of normal human endometrium or endometrial tumors.

Third Place

Anesthesia Alters Glucuronidation

Exhibitors: Drew R. Engles and John B. Watkins III, Indiana University School of Medicine, Bloomington.

Large, rapid decreases in hepatic UDP-glucuronic acid concentrations, which occur following exposure to myriad chemicals, affect the subsequent glucuronidation of many drugs.

To elucidate the mechanisms responsible for these severe changes, the effect of anesthesia on the substrates and enzymes for the synthesis and degradation of UDP-glucuronic acid was determined in male and female Swiss-Webster mice.

Inhalation of 2.5% enflurane, 3.5% halothane, 3.5% isoflurane and 3.5% sevoflurane decreased the concentrations of UDP-glucuronic acid by 30% to 57%. UDP-glucose levels were decreased by 20% in male mice exposed to enflurane and sevoflurane and by 60% in female mice anesthetized with halothane and sevoflurane. Activities of UDP-glucose dehydrogenase (which synthesizes UDP-glucuronic acid) and UDP-glucuronosyltransferase (which degrades UDP-glucuronic acid during drug conjugation) were unaffected by exposure to volatile anesthetics. Microsomal nucleotide pyrophosphatase activity (which degrades UDP-glucuronic acid) was increased by 47% to 65% in female mice after inhalation of halothane, isoflurane and sevoflurane. Kinetic studies indicated that the V_{max} for hydrolysis of 4-nitrophenol thymidine 5'-monophosphate ester by nucleotide pyrophosphatase was increased by 55% to 65% in female mice exposed to halothane, isoflurane and sevoflurane, whereas the K_m for this reaction was unchanged.

Thus, the alterations in nucleotide pyrophosphatase kinetics may be partly responsible for the decreased hepatic UDP-glucuronic acid concentrations observed in mice exposed to volatile anesthetics. (Supported by the American Diabetes Association.)

Resolutions

RESOLUTION 88-1 DELEGATE APPORTIONMENT
Introduced by: Harrison-Crawford County Medical Society, District 3
Referred to: Reference Committee 2
ACTION: Adopted as Amended

Whereas, Section 3.0205 of the ISMA Constitution and Bylaws provides in pertinent part that, "... Where a component society is made up of physicians of more than one county, each county shall be entitled to at least one delegate and one alternate delegate who shall be a resident of the county represented as a delegate and who shall be elected by the physicians residing in such county ..."; and Whereas, It is the desire of Harrison-Crawford County Medical Society to be allowed, if it so chooses, to have both of their county delegates come from the same county if that is the desire and vote of the Society; therefore be it

RESOLVED, That Section 3.0205 be amended to allow small societies consisting of more than one county to have all of their delegates from the same county if that is the desire of the majority of the members of each participating county, provided that this would not decrease the total number of delegates from the component medical society and provided that each county of the component medical society has at least one physician member.

RESOLUTION 88-2A VOLUNTARY ACCEPTANCE OF MEDICARE ASSIGNMENT
Introduced by: Lake County Medical Society
Referred to: Reference Committee 4
ACTION: Adopted Substitute Resolution 88-2A in lieu of Resolutions 88-2 and 88-22

RESOLVED, That the ISMA encourage all physicians in Indiana to voluntarily accept assignment on Medicare patients when the individual patient meets an economic means test; and be it further

RESOLVED, That the Indiana State Medical Association Board of Trustees immediately initiate the necessary steps for implementation of a program in the State of Indiana to establish criteria, recruit physician acceptance, and identify and document Medicare recipients who would be eligible under the criteria and would most benefit from case-by-case acceptance of assignment.

RESOLUTION 88-3 NEGOTIATIONS COMMITTEE, BYLAWS SECTION 7.1005
Introduced by: Commission on Constitution and Bylaws
Referred to: Reference Committee 2
ACTION: Substitute Resolution 88-11A Adopted in lieu of Resolutions 88-3 and 88-11

RESOLUTION 88-4 AMENDMENT OF SECTION 3.021102, ISMA BYLAWS
Introduced by: Commission on Constitution and Bylaws
Referred to: Reference Committee 2
ACTION: Adopted as Amended

Whereas, The ISMA Bylaws now specify that Reference Committee 1 is organized for the "sole" purpose of studying the addresses of officers and do not allow the Speaker the latitude of making further assignments to that Committee; and

Whereas, The written reports from officers are also assigned to Reference Committee 1; and

Whereas, It would be less cumbersome for Reference Committee 1 to include (if deemed necessary) in its report to the House specific recommendations for House action, rather than individual resolutions for which each has to be assigned a number and presented to the Committee on Rules and Order of Business as a late resolution, necessitating an extra meeting of that Committee; therefore be it

RESOLVED, That Section 3.021102, Responsibilities of Reference Committees, be amended as follows:

"Four or more reference committees designated by numerals are hereby constituted to which all matters shall be referred, at least one of which shall be organized for the purpose of studying the addresses and reports of the President, President-elect, the report of the Executive Director, and Chairman of the Board of Trustees. This committee shall be expected, as it deems appropriate, to translate the reports by these officers into recommendations for presentation to the Board of Trustees."

RESOLUTION 88-5 DISCREPANCIES IN DEFINITION OF "OFFICERS"
Introduced by: Commission on Constitution and Bylaws
Referred to: Reference Committee 2

Resolutions

CODE: --- Deletion
 Addition (underlined)

ACTION: Adopted. (Constitution Changes, First and Third Resolves, to be published twice in INDIANA MEDICINE and brought back to 1989 House of Delegates for final vote.)

Whereas, the ISMA Constitution, Article VI, Officers, specifies that, "The *general* officers of the Association shall be a President, President-elect, Immediate Past President, Treasurer, Assistant Treasurer, Speaker, Vice Speaker, Trustees, and the Executive Director;" and

Whereas, the Constitution, Article VI, does not include Alternate Trustees; and

Whereas, Bylaws Section 4.01, Composition, specifies that "The officers of this Association shall be a President, President-elect, Immediate Past President, Treasurer, Assistant Treasurer, Speaker, Vice Speaker, and the Executive Director;" and

Whereas, Bylaws Section 4.01 does *not* include Trustees (as specified in Article VI of the Constitution) nor does it include Alternate Trustees; therefore be it

RESOLVED, That Article VI, Officers, of the ISMA Constitution be amended as follows:

"The *general* officers of the Association shall be a President, President-elect, Immediate Past President, Treasurer, Assistant Treasurer, Speaker, Vice Speaker, Trustees, Alternate Trustees, and the Executive Director."

and be it further

RESOLVED, That Bylaws Section 4.01, Composition, be amended as follows:

"The officers of this Association shall be a President, President-elect, Immediate Past President, Treasurer, Assistant Treasurer, Speaker, Vice Speaker, Trustees, Alternate Trustees, and Executive Director, each of whom shall be a member, except the Executive Director, who need not necessarily be either a physician or a member."

and be it further

RESOLVED, That Constitution Article V, House of Delegates, in order to be consistent with the above-mentioned Article VI and Section 4.01 be amended as follows:

"The legislative and policy-making body of the Association is the House of Delegates composed of elected representatives and others as provided in the Bylaws. The House of Delegates shall transact all business of the Association not otherwise specifically provided for in the Constitution and

Bylaws and shall elect the *general* officers of the Association, except Trustees, Alternate Trustees, and the Executive Director, as otherwise provided in the Bylaws.

(Note: The House of Delegates may amend the ISMA Constitution at any convention provided the proposed amendment shall have been introduced at the preceding annual convention and provided two-thirds of the voting members of the House of Delegates vote approval and provided that it shall have been published twice during the year in INDIANA MEDICINE.)

RESOLUTION 88-6A COMMUNICATION/METHODS BY INSURERS

Introduced by: Lake County Medical Society

Referred to: Reference Committee 4

ACTION: Adopted Resolution 88-6A in lieu of Resolutions 88-6 and 88-26

RESOLVED, That the ISMA object to statements by insurers of appropriateness of care, and be it further

RESOLVED, That the ISMA urge that all such statements by insurers and their designees be clearly limited to statements pertaining to whether the care or service is covered or not covered, and be it further

RESOLVED, That the ISMA investigate whether attempts to determine appropriateness by third parties constitutes the practice of medicine without a license, and be it further

RESOLVED, That the ISMA Board of Trustees refer this resolution to the Indiana State Insurance Commissioner, to the appropriate insurers, to the public, and direct a similar resolution to the AMA Delegation.

RESOLUTION 88-7 NURSING HOME CARE (MODIFICATION OF RESOLUTION 87-9)

Introduced by: Commission on Medical Services

Referred to: Reference Committee 5

ACTION: Adopted as Amended

Whereas, Physicians have an essential role in the delivery of medical care across the continuum of the health care system; and

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Whereas, The care of the chronically ill or frail elderly necessitates physician assessment and intervention on a regular and timely basis, and physician visits to a nursing home assure that medical knowledge and skills are incorporated into the care of residents and can provide knowledge, education, and psychosocial support for the patient, patient's family, and other care givers; and

Whereas, Given recent Medicare reimbursement changes, the complexity and severity of medical problems of persons in nursing homes is increasing which in turn increases the need for physician involvement; and

Whereas, The traditional ethical and legal commitment of physicians to patient care dictates that physicians assume direct and ongoing responsibility for the medical care of nursing home patients—part of that commitment being to ensure that nursing home residents have access to medical services that are comparable in quality to those provided in the community; and

Whereas, The chronic nature of most nursing home residents' illnesses requires ongoing physician attention to the psychological support and education of patients and families as well as the treatment of the disease itself; and

Whereas, Improved access will require education of physicians concerning usual areas of medical practice such as the care of acute episodic illnesses and monitoring of chronic disease. It should also include participation in the assessment of need for rehabilitation or maintenance therapy to improve or maintain patient function and the provision of education and psychological support for the patient's family and other care givers. The physician should be an active member of the team of professionals providing care in the nursing home; and

Whereas, Physicians providing medical direction in nursing homes have a responsibility to provide leadership in developing, implementing, and carrying out policies and procedures concerning at least these areas: organizing and allocating services; educating non-physician staff providing clinical care; assuring appropriate use of beds and resources; assessing quality of care; granting and reviewing privileges of physicians and non-physician medical practitioners; participating in care decisions that affect a person's longevity and quality of life; therefore be it

RESOLVED, That frequency of physician visits to nursing home residents should be based on the patient's needs and not specified on arbitrary schedules or time periods.

RESOLUTION 88-8 FEDERAL LEGISLATION TO

MONITOR MEDICARE/ MEDICAID

Introduced by: Lake County Medical Society
Referred to: Reference Committee 4
ACTION: Not Adopted

Whereas, Administrative problems experienced by practitioners and patients in dealing with Medicare/Medicaid carriers are extreme; and

Whereas, Carriers are private entities under contract to carry out Medicare/Medicaid carrier duties; and

Whereas, Medicare/Medicaid does not directly provide a means to patients and practitioners for resolving with Medicare/Medicaid any problems created by carrier administrative practices; and

Whereas, It is in the interest of Medicare/Medicaid to encourage local monitoring of carrier practices to assure responsive administration; therefore be it

RESOLVED, That ISMA initiate and support a federal legislative proposal allowing states to monitor and to prescribe (within federal guidelines) responsive administrative practices for Medicare/Medicaid carriers serving patients and practitioners within the State.

RESOLUTION 88-9 UNSLOTTED POSITIONS FOR AMA DELEGATES AND ALTERNATE DELEGATES

Introduced by: ISMA Board of Trustees
Referred to: Reference Committee 1
ACTION: Adopted as Amended

Whereas, Section 3.0208, "Election of Delegates to the American Medical Association," does not indicate that specific alternate delegates are matched with specific delegates; and

Whereas, The American Medical Association's Constitution and Bylaws do not require that states have specific alternate delegates for specific AMA delegates nor do the AMA Bylaws spell out the state election process for AMA delegates and alternates; and

Whereas, It is more advantageous for the Indiana-AMA Delegation to have flexibility with regard to the election process and the assignment of alternate delegates to represent delegates when the occasion arises; therefore be it

RESOLVED, That the ISMA Constitution and

Resolutions

Bylaws Section 3.0208 be amended to read as follows:

"Election of Delegates to the American Medical Association: The House of Delegates shall elect representatives to the House of Delegates of the American Medical Association in accordance with the Constitution and Bylaws of that body.

"Upon expiration of an AMA Delegate's or Alternate Delegate's term, election of a qualified member shall be accomplished to fill each vacancy thereby created. Nominations shall be made for vacancies without regard to the specific vacancy, and the candidates with the most votes, provided that a majority vote has been obtained, shall be deemed elected to the vacancies. An AMA Delegate and Alternate Delegate may succeed himself in office or be elected to fill any other vacancy in the delegation. The Alternate Delegate positions are not matched with the Delegate positions; therefore at the direction of the AMA Delegation, any Alternate can represent a Delegate.

"In the event of a permanent vacancy occurring among the AMA Delegates, the remaining elected Delegates and Alternates to the AMA shall meet and nominate one of the Alternates to assume the vacancy until the next meeting of the Indiana State Medical Association House of Delegates, at which time the House will fill such vacancy. The nominated member proposed by the AMA delegation shall be subject to the confirmation of the Board of Trustees."

RESOLUTION 88-10 DUES INCREASE

Introduced by: Executive Committee
 Referred to: Reference Committee 5
 ACTION: Adopted (Roll Call Vote)

Whereas, ISMA has not had a dues increase since 1984; and

Whereas, ISMA's dues are lower than any of the adjacent midwestern states; and

Whereas, In order to continue to provide ISMA membership with expanding services and the establishment of new programs that the membership desires, ISMA must have required financial resources; and

Whereas, The ISMA Board of Trustees has deliberated on this issue over the last twelve months; therefore be it

RESOLVED, That the ISMA dues be increased as follows:

1989 \$50

1990 — \$25

1991 — \$25

1992 — \$25

RESOLUTION 88-11A

Introduced by:
 Referred to:
 ACTION:

DISSOLUTION OF CERTAIN ISMA COMMISSIONS AND COMMITTEES

Executive Committee
 Reference Committee 2
 Substitute Resolution 88-11A
 Adopted in lieu of Resolutions 88-3 and 88-11

RESOLVED, That the Indiana State Medical Association recognizes the importance of responsive and interactive leadership in matters of such importance as the reduction of drunk driving, public relations, negotiations, and medical-legal concerns by elimination of the Medical-Legal, Reduce Drunk Driving, and Negotiations Committees, and the Commission on Public Relations from the Bylaws of the Indiana State Medical Association, and by assignment of these responsibilities to the Board of Trustees, thereby insuring unfettered action on these important concerns, and be it further

RESOLVED, That the Board of Trustees review the functions and performance of all ISMA commissions and committees every two years to determine if they are performing adequately, effectively, and efficiently, and that the Board may recommend to the House of Delegates changes or dissolution of those commissions or committees which do not appropriately serve the purposes of the ISMA.

RESOLUTION 88-12 REGULATION OF TANNING FACILITIES

Introduced by: Section of Cutaneous Medicine
 Referred to: Reference Committee 5
 ACTION: Adopted as Amended

Whereas, Harmful changes in the skin and other organs can occur because of chronic improper and dangerous exposure to ultraviolet light emitted by tanning parlor equipment; and

Whereas, Some of these harmful changes include cataracts, skin cancers, impairment of immune systems, premature aging, and photosensitivity reactions when using perfume, cosmetics and certain

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drugs, including some antibiotics and birth control pills; and

Whereas, Laboratory findings of a recent FDA study on long-term threat of skin damage and neoplasms from UVA exposure support the American Academy of Dermatology's Photobiology Task Force findings of 1983, that injury from UVA augments skin aging at a faster rate than chronological aging; and

Whereas, The Section of Cutaneous Medicine endorses the findings released by the FDA, warning Americans that UVA tanning booths and sunbeds pose potentially significant health risks to users and should be discouraged; therefore be it

RESOLVED, That the Section of Cutaneous Medicine recommends the ISMA pursue state and local legislation to require appropriate regulatory and oversight activity, including informed consent and posted safety regulation for tanning parlor facilities to reduce improper and dangerous exposure by ultraviolet light to our patients and general public consumers.

RESOLUTION 88-13 ADMINISTRATIVE CHARGES TO PATIENTS OR THIRD-PARTY PROVIDERS

Introduced by: Dyke Egnatz, M.D.
Referred to: Reference Committee 4
ACTION: Adopted

Whereas, It is a fundamental tenet of physicians to treat patients regardless of their ability to pay; and

Whereas, Many physicians are not contractual participants in third-party payment plans; and

Whereas, The newly designed benefit policies have included modifiers and exclusions such as preadmission certification and treatment plan, second surgical opinion, length of stay allowances and extension requirements, which in turn have created ill-timed impositions on the physician and his office staff with these additional services to the insurance carrier; and

Whereas, Such requirements offer further obstacles to effective patient care with frequent busy-signal phone lines, limited availability time of reviewers, frequent extended on-hold telephone time in ranges of 10-30 minutes or longer; therefore be it

RESOLVED, That ISMA investigate the appropriate utilization of CPT-9 Codes (99013) to identify the option for reasonable charges in compensation for these administrative services.

RESOLUTION 88-14 INTERFERENCE OF PATIENT

MONITORING BY THIRD-PARTY PRESCRIPTION PLANS

Introduced by: Dyke Egnatz, M.D.
Referred to: Reference Committee 4
ACTION: Adopted as Amended

Whereas, The prescribing of legend drugs is an integral part of the physician's judgment and treatment plan; and

Whereas, The physician's selection of medication includes many utilization factors; namely, quantity authorized, dosage schedule, cost of initial trial, risk of overdose, risk of overutilization, risk of illegal distribution or resale, patient response, patient monitoring and compliances; and

Whereas, Third-party prescription plans have become interpreted by the patients as mandatory 90- and 180-day supplies which risk overconsumption and loss of physician monitoring; and

Whereas, Many of these plans require out-of-state mail sources with loss of revenue to Indiana-based pharmacies and loss of quality control to often mandatory generic substitution; therefore be it

RESOLVED, That ISMA review the impact upon the quality of care of insurance benefit protocols which necessitate mandatory prescribing of 90- or 180-day supplies of drugs without regard to diagnosis.

RESOLUTION 88-15 BYLAWS SECTION 4.0101

Introduced by: Indiana Delegation to the AMA
Referred to: Reference Committee 1
ACTION: Adopted as Amended

Whereas, The members of the Indiana Delegation to the AMA have been meeting more often to discuss diverse matters of importance; and

Whereas, Section 4.0101 of the Bylaws defining major offices in the Indiana State Medical Association has been carefully and fully reviewed by all; therefore be it

RESOLVED, That Bylaws Section 4.0101 be amended as follows:

"... The offices of President, President-elect, Immediate Past President, Treasurer, Assistant Treasurer, Speaker, Vice Speaker, as well as AMA Delegates, AMA Alternate Delegates, and ISMA Trustees and ISMA Alternate Trustees are major offices. Individuals may not hold more than one major office during a given term and must resign from

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a major office if they attain a second, with the exception of the AMA Delegates and Alternate Delegates who may hold a major state office while serving on the Delegation."

RESOLUTION 88-16A
ILLEGAL DRUGS AND RELATED PROBLEMS
Introduced by: Anil K. Sarkar, M.D., Clay County Medical Society
Referred to: Reference Committee 5
ACTION: Adopted Substitute Resolution 88-16A

RESOLVED, That the ISMA exert efforts to urge the United States Congress to pass appropriate laws relating to drug abuse and to support rehabilitation centers where drug abusers may be treated with anonymity, dignity and compassion.

RESOLUTION 88-17
MEDICAL STUDENT SOCIETY REPRESENTATIVES ON THE ISMA BOARD OF TRUSTEES
Introduced by: Student Medical Society
Referred to: Reference Committee 2
ACTION: Adopted as Amended

Whereas, The Medical Student Society is a relatively new, chartered component of the Indiana State Medical Association; and

Whereas, The members of the Medical Student Section are in training throughout different areas in the State of Indiana and therefore do not fall in the category of any one district; and

Whereas, More effective communication and interaction are desired between medical students and the leadership of the Indiana State Medical Association; and

Whereas, Medical students have concerns which are potentially different from practicing physicians; therefore be it

RESOLVED, That the Medical Student Society should have a non-voting Trustee and an Alternate Trustee to represent the Medical Student Society on the Indiana State Medical Association Board of Trustees, and that the Student Trustee and Alternate Trustee shall be elected by the members of the ISMA Medical Student Society during its annual meeting. The term of office shall be one year.

RESOLUTION 88-18 **AIDS COUNSELING DOCUMENTATION**

Introduced by: Ed Langston, M.D., Chairman
Commission on Legislation
Referred to: Reference Committee 3
ACTION: Adopted as Amended

Whereas, The Indiana State Board of Health is seeking to have the Indiana Medical Licensing Board promulgate a rule to define how pre and post HIV test counseling is to be provided in certain circumstances; and

Whereas, Indiana law currently provides that when certain crimes are committed that could result in epidemiologically demonstrated risk of HIV transmission, and if the defendant was counseled to the presence of HIV prior to the commission of the crime, that the court may use this information as an aggravating circumstance for sentencing purposes; and

Whereas, The Indiana State Board of Health believes that pre and post HIV counseling is important in helping to reduce the likely incidence of transmission of the HIV; and

Whereas, The Indiana State Board of Health has sought the support of the ISMA with the proposed rule; therefore be it

RESOLVED, That the ISMA House of Delegates oppose the promulgation of the proposed rule from the Indiana State Board of Health and that this opposition be communicated to the Indiana State Board of Health.

PROPOSED RULE **INDIANA STATE BOARD OF HEALTH** **INDIANA MEDICAL LICENSING BOARD**

I. Communicable Diseases

A. Testing

1. The following requirements apply to testing for the diagnosis of communicable and dangerous diseases as defined in IC 16-1-9.5 and the rules adopted thereunder. The requirements do not apply to testing as a prerequisite to the use of blood or blood products.
2. The physician who orders the testing is responsible for ensuring that the patient either receives or is offered counseling either directly from the physician or by referral to an appropriate counselor both before and after the testing. The offered

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counseling must occur in such a manner that patients have the opportunity to ask questions prior to being tested and receive specific answers when the test results are known. This counseling must include the recommendation of follow-up testing if such is medically indicated.

- 3. The patient's acceptance or rejection of a physician's recommendation of counseling or testing shall be noted on the patient's chart or medical record.
 - 4. If the physician determines the patient to be unwilling to or incapable of receiving or understanding the counseling, the physician shall make a notation in the patient's chart or medical record indicating the patient's unwillingness or inability and the reason(s) therefore.
- B. Reporting
- 1. The physician who orders the testing is responsible for ensuring that all information required to be reported concerning communicable and dangerous diseases is reported to the Indiana State Board of Health or to local Health Officers consistent with any communicable and dangerous disease reporting law.
- C. Precautions
- 1. The physician is responsible for following all appropriate infection control procedures, including universal precautions, as required by law.

RESOLUTION 88-19 TOBACCO IN VENDING MACHINES

Introduced by: Ed Langston, M.D., Chairman, on behalf of the Commission on Legislation

Referred to: Reference Committee 3

ACTION: Adopted

Whereas, Scientific studies have provided sound evidence that tobacco use causes physical harm and even death; and

Whereas, The U.S. Surgeon General and the AMA have called for a tobacco-free society by the year 2000; and

Whereas, The members of the Indiana State Medical Association are individually and collectively committed to helping the U.S. Surgeon General realize the above-mentioned goal; and

Whereas, Indiana law prohibits the sale and distribution of tobacco products to minors (those persons younger than 18 years old); and

Whereas, Tobacco products are easily accessible to minors through vending machines that dispense cigarettes without regard to the age of the person operating the machine; therefore be it

RESOLVED, That the Department of Government Relations of the Indiana State Medical Association actively pursue legislation that, if enacted, would prohibit the distribution of tobacco products through vending machines.

RESOLUTION 88-20A

Introduced by: Ed Langston, M.D., Chairman, on behalf of the Commission on Legislation

Referred to: Reference Committee 3

ACTION: Adopted Substitute Resolution 88-20A in lieu of Resolutions 88-20 and 88-23

RESOLVED, That the Board of Trustees of the Indiana State Medical Association develop a rational policy on AIDS based on sound medical principle; and that this policy be forwarded to the ISMA House of Delegates for consideration.

RESOLUTION 88-21 EXPANSION OF MEDICAID PRENATAL CARE PROGRAM

Introduced by: Ed Langston, M.D., Chairman, on behalf of the Commission on Legislation

Referred to: Reference Committee 3

ACTION: Adopted as Amended

Whereas, Indiana's infant mortality rate is 11.2/1000 live births; and

Whereas, In 1984 Indianapolis had the worst black infant mortality rate of any major U.S. city, and Indiana ranked seventh worst for white infant mortality; and

Whereas, Indiana is one of only 13 states that is not expected to meet the Surgeon General's 1990 objective for an infant mortality rate of 9/1000 live births; and

Whereas, The Institute of Medicine found that for

Resolutions

every \$1.00 spent on prenatal care, \$3.30 is saved in the cost for the care for low birthweight infants; and

Whereas, The average cost to "graduate" a sick infant from a neonatal intensive care unit is estimated to be between \$20,000 and \$100,000 per infant; and

Whereas, Many low birthweight infants who survive often are afflicted with mental and physical disabilities, adding additional health care costs; and

Whereas, The National Commission to Prevent Infant Mortality recommends that the Medicaid program should be expanded to cover all pregnant women and infants who have family incomes at or below 200% of the federal poverty level; and

Whereas, Indiana's current Medicaid program covers only those pregnant women whose family incomes are at 50% of the federal poverty level; therefore be it

RESOLVED, That the Indiana State Medical Association:

- (1) expend legislative and public relations efforts to support expanding the Medicaid program to cover all pregnant women and their infants who have family incomes at or below 150% of the federal poverty level; and
- (2) support expanding the Medicaid program to cover children ages 1 through 8 who have family incomes at or below 100% of the poverty level.
- (3) encourage outreach programs to identify persons eligible to participate, direct those persons to the prenatal care programs, and ensure their participation in the programs.

RESOLUTION 88-22 MEDICARE ASSISTANCE PROGRAM

Introduced by: Marion County Medical Society
Referred to: Reference Committee 4
ACTION: Adopted Substitute Resolution 88-2A in lieu of Resolutions 88-2 and 88-22

RESOLUTION 88-23 AIDS TESTING

Introduced by: The Fort Wayne (Allen County) Medical Society
Referred to: Reference Committee 3
ACTION: Adopted Substitute Resolution 88-20A in lieu of Resolutions 88-20 and 88-23

RESOLUTION 88-24 HEALTHCARE FOR

CHILDREN, AGES 0-8, IN STATE OF INDIANA

Introduced by: ISMA Commission on Medical Services Subcommittee to Study the Department of Education Proposal (Frank Hieber, M.D.; Virginia Wagner, M.D.; Denise Ingram, M.D., M.P.H.; Phyllis Lewis, I.D.O.E.; Joan Murray, I.D.O.E., Betty Corbitt, I.D.O.E.)
Referred to: Reference Committee 5
ACTION: Adopted as Amended

Whereas, Many children of low income families tend to be underserved by the present healthcare system in Indiana; and

Whereas, By the time these children reach school age, many conditions they have developed cannot be corrected; and

Whereas, The Department of Education has tried to identify and address conditions in these children so that they may teach them more effectively; and

Whereas, The Indiana State Board of Health has identified 40 counties in the state where children of low income families have limited access to adequate health care; therefore be it

RESOLVED, That ISMA recognize and study the problem of healthcare for Indiana children, ages 0-8. If the local healthcare system is inadequate, attempts should be made through the county medical society to provide such care.

RESOLUTION 88-25 OFFICE MAGAZINES WITHOUT CIGARETTE ADS

Introduced by: ISMA Third District
Referred to: Reference Committee 5
ACTION: Adopted as Amended

Whereas, Physicians are or should be promoting a smoke-free environment; and

Whereas, Many magazines in our office waiting rooms contain cigarette ads; therefore be it

RESOLVED, That ISMA annually, via ISMA's INDIANA MEDICINE, encourage physicians to substitute magazines without cigarette ads for magazines with cigarette ads and to include in INDIANA MEDICINE a list of the former, and be it further

RESOLVED, That this resolution be submitted to the AMA for its consideration.

Resolutions

RESOLUTION 88-26 THIRD-PARTY MEDICAL NECESSITY DETERMINATIONS

Introduced by: Grant County Medical Society
Referred to: Reference Committee 4
ACTION: Adopted Resolution 88-6A in
lieu of Resolutions 88-6 and
88-26

RESOLUTION 88-27 PATIENTS' COMPENSATION FUND

Introduced by: Lake County Medical Society
Referred to: Reference Committee 4
ACTION: Adopted as Amended

Whereas, The Indiana Patients Compensation Fund was intended as a uniform approach to a statewide problem; and

Whereas, As originally intended, premiums throughout the state of Indiana were to be uniform for various classes of practice; and

Whereas, Recent acts by the Insurance Commissioner in approving liability rates now allow different geographic rating areas; and

Whereas, Overall premiums should be adjusted to assure uniform treatment of all categories of a particular insurer among all areas of the state; therefore be it

RESOLVED, That ISMA support legislation through modification of existing insurance codes, that would permit the Insurance Commissioner to establish rates of contribution to the Patient Compensation Fund indexed (related) to category of participation rather than basic insurance premium.

RESOLUTION 88-28 TRUTH IN INSURANCE BILL

Introduced by: Bartholomew-Brown County
Medical Society
Referred to: Reference Committee 2
ACTION: Adopted and Referred to the
Board of Trustees for Action

Whereas, Many purchasers of medical insurance are not fully informed about cost containment features in their insurance policies; and

Whereas, The physicians of Indiana support the right of their patients to choose such policies after full disclosure of limitations to coverage; therefore be it

RESOLVED, That it is the duty of any provider of medical insurance in the State of Indiana to fully inform in clear language prospective purchasers of insurance limitations which may affect the quality or quantity of medical services provided under the plan. Examples of such features are:

- (1) Contracts or agreements between the insurer and physicians, hospitals, pharmacies, or other providers of services which limit or affect care provided to the patient either directly or indirectly by limiting reimbursement in any fashion;
- (2) Financial incentives, withholds, "gatekeeper" arrangements or other arrangements which may affect the medical decision-making process;
- (3) Agreements which limit free referral of patients by the patient's physician to any other physician or hospital.

RESOLUTION COMMENDATION FOR ROSE M. VANCE

Introduced by: St. Joseph County Medical
Society and Thirteenth District
ACTION: Adopted by Acclamation

Whereas, Mrs. Rose M. Vance became Assistant Secretary to the St. Joseph County Medical Society in 1969; and

Whereas, Mrs. Vance assumed the office of Executive Director of the St. Joseph County Medical Society in 1976; and

Whereas, Mrs. Vance has given many years of service as Secretary to the Thirteenth District Medical Society of the Indiana State Medical Association; and

Whereas, Mrs. Vance is retiring on December 31, 1988; therefore be it

RESOLVED, That Mrs. Rose M. Vance be commended and thanked for her 19 1/2 years of faithful service to the physicians of St. Joseph County, to the Thirteenth District, and to the Indiana State Medical Association.

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it, however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon[®] is indicated as a sympatholytic and mydriatic. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.^{1,2} Also dizziness, headache, skin flushing reported when used orally.^{1,3}

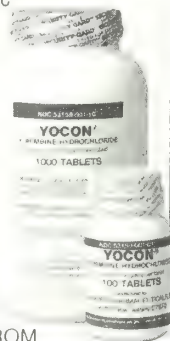
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.^{1,3,4} 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.³

How Supplied: Oral tablets of Yocon[®] 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221, November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982

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1938-1988

Indiana State Medical Association

Fifty Year Club Honor Roll

Last year 38 physician members were honored by the Indiana State Medical Association in recognition of their 50 years of service as loyal and devoted practitioners of medicine. The new members of the Fifty Year Club join the roster of nearly 1,300 distinguished Hoosier physicians inducted into the Fifty Year Club since its inception in 1948.

The Indiana State Medical Association wishes to formally acknowledge the unselfish service to their patients and profession contributed by the following physicians:

David L. Adler, M.D., Bartholomew-Brown County.
Richard P. Austin, M.D., Lawrence County.
Mier A. Bizer, M.D., Clark County.
Harvey C. Boyd, M.D., Vigo County.
Robert R. Brown, M.D., Vigo County.
James M. Burk, M.D., Adams County.
Leon H. Chandler, M.D., Elkhart County.
Raymond L. Conklin, M.D., Elkhart County.
Robert H. Denham Jr., M.D., St. Joseph County.
William O. Denzer, M.D., Vanderburgh County.
Jack L. Eisaman, M.D., Wells County.
Morris S. Friedman, M.D., St. Joseph County.
William S. Garner, M.D., Marion County.
John C. Glackman, M.D., Spencer County.
Wayne E. Hardin, M.D., Wells County.
Byron W. Kilgore, M.D., Fort Wayne-Allen County.
Dorothy M. Kreidl, M.D., Wayne County.
Donald S. Ladig, M.D., Fort Wayne-Allen County.
Edward C. Lidikay, M.D., Marion County.
John R. Lionberger, M.D., St. Joseph County.

William B. Lybrook, M.D., Marion County.
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Donald F. Moore, M.D., Marion County.
Richard M. Nay, M.D., Marion County.
Howard F. Polley, M.D., Owen-Monroe County.
Norman F. Richard, M.D., Steuben County.
Paul W. Runge, M.D., Wayne County.
Herbert E. Salsburg, M.D., LaPorte County.
Charles F. Seaman, M.D., Marion County.
Frances G. Sheehan, M.D., Marion County.
Crystal R. Slick, M.D., Randolph County.
Herschel S. Smith, M.D., Owen-Monroe County.
William D. Snively, M.D., Vanderburgh County.
Harold E. Stadler, M.D., Marion County.
Richard C. Stauffer, M.D., Fort Wayne-Allen County.
Joseph E. Tether, M.D., Marion County.
Morris E. Thomas, M.D., Marion County.
Roscoe S. Yegerlehner, M.D., Tippecanoe County.



New members of the ISMA Fifty Year Club who attended a reception in their honor are Dr. Herschel S. Smith, Dr. Byron W. Kilgore, Dr. Wayne E. Hardin, Dr. Donald S. Ladig, Dr. C.R. Slick, Dr. W. Stanley Garner, Dr. Norman F. Richard, Dr. Robert R. Brown, Dr. Francis G. Sheehan and Dr. H. Clark Boyd.

The General Internist: Is He the Gatekeeper of the Medical Care System or the Doormat?

Letter to the Editor

CAN WE TALK? May I vent my spleen? May I unload my venom sac? May I ventilate a little hostility? May I give you a little insight?

The general internist has been named one of the gatekeepers of the health care system in America. I maintain that this concept has been fractured, fragmented and circumvented. The general internist has not become the gatekeeper or the doorman of the health care system; he is just the doormat.

Some patients have become their own gatekeepers—flitting like hummingbirds from specialist to specialist, receiving advice on some tiny fragment of their bodies, and then trying to correlate all the data to make some grand general program for advising themselves about their health.

Other patients are getting advice or being tested at malls, airports, fairs, schools and lobbies. This type of medicine has been called boutique medicine: a cholesterol here, a blood pressure there, a blood sugar over there, a stool check across the way, a walk-in xero-mammogram station, a walk-in dual-photon bone densitometer, a tuberculin test done on request, a blood pressure reading done in the front window of a drug store. Maybe next year we will have a pap smear done in a phone booth, a rectal exam done in a toilet stall and perhaps a short arm inspection in a bank vault.

Also scattered here and there in the countryside are walk-in free-standing "doc-in-the-box" offices. Here one is subjected to momentary care or brief encounter care, with no correlation of

historical data or in-depth evaluation and often without a transfer of record-keeping to anyone else.

Then some people go to "one-shot-charlie," multiphasic clinics that try to give some unified advice based on some history, physical and lab evaluation. Unfortunately, because of the isolated and fragmented care the patient may have received, past data are not available for such a clinic to use in evaluating problems, particularly problems that come and go. And with inadequate background data, the multiphasic clinic may arrive at erroneous conclusions.

Also, we see patients checked by those who propose to carry out a unified evaluation. They may call themselves a wellness clinic. They may be an executive physical group or a company physical group. During these types of examinations, the patient is often less than honest and may even cover up information that he or she feels might be embarrassing or detrimental to public image or promotion.

Many experts say that a good and proper history will generate 84% of the diagnoses of importance. And a history is still an art form—a personal one-to-one communication requiring mutual confidence of the doctor and the patient, under proper relaxed conditions. A good physician will understand a patient's problems much better if the physician carries this out himself or herself. Then experts say that 8% more of diagnoses are generated by the physical exam and the final 8% by all laboratory and x-ray testing. Many of the fragmentary or momentary care

boutique medicine systems are not aware of these percentages. They believe in testing only.

I maintain that many patients today are being shopping-malled, health-faired, boutique'd, wellness clinic'd, executive-physicaled into a false sense of security or into tangential pieces of advice that are not important.

On the other hand, the gatekeepers of the medical care system are paid trifles for a major cognitive service. We may get \$25 for an office visit, which gives the patient and the doctor an insight into important treatment of an important disease. On the other hand, some medical specialist will get a few hundred dollars for spending the same period of time doing some mechanical test that has little benefit. In other words, if the doctor uses his or her brain, which is the greatest computer ever made, and also uses his or her eyes, ears and hands, the doctor is paid a bowl of pottage. On the other hand, if the doctor uses a blade, a pipe, a hose or a device with wires, medical insurance systems will spit golden coins like a Las Vegas jackpot.

Yes, the medical insurance reimbursement system has been penny-wise and pound-foolish. The system has been stingy in providing reimbursement for office visits—and profligate and extravagant if it comes to the use of any tool or device. I can give you firsthand history that in the 1940s, the medical and surgical specialists of America did their best to prevent the introduction of Blue Cross and other private medical insurance into the United States. They said it was the first step on the road to socialism and

communism and a totalitarian state. And, 20 some years ago, these same medical and surgical specialists cried bitter tears that Medicare was a vicious communist plot that should be resisted. But, these same specialists have found that the private medical insurance and Medicare reimbursements made them millionaires.

The gatekeepers of the medical care system have to complete a medical insurance or Medicare form for a \$4 urine test or a \$25 office call that is of the same complexity as a form completed by an orthopedic surgeon for a \$3,000 hip replacement or by a cardiac surgeon for a \$5,000 coronary bypass!

Yes, gatekeepers are permitted to take care of most of the off-work or disability forms the patient needs. We also are allowed to make the

statements excusing patients from jury duty or granting them disabled parking spots. We are also asked to phone dozens of prescriptions every day, as a convenience to our patients. Some of our patients drop by and permit us to write three to 10 prescriptions at one time so that they can mail them away and save money rather than have local prescriptions refilled by phone. Several times, I have had patients who said they had seen another specialist but wanted me to write or call the prescription that the specialist recommended.

I think this designation of the general internist as the gatekeeper is often happily tendered to us by other medical and surgical specialists who say to themselves, "good riddance!" Many pay lip service to the general internist as the backbone of the medical

care system, but I think we are really the boneheads of the system.

Demographic data in the past have suggested the need for more general internists, but the system is discouraging it. In the Sept. 29 *New England Journal of Medicine* comes the Hsiao plan, which some say will raise the fees of the general internist and drop those of some specialists. I don't plan to hold my breath until this millenium arrives!

I say there is a place in the field of medicine for a caring internist who keeps excellent records, evaluates his patients in depth and follows them over decades of time, producing continuity of care, and combines this with courtesy and diplomacy. I say there is a place for a gatekeeper in the medical care system but not a doormat. — Philip Ball, M.D., Muncie.

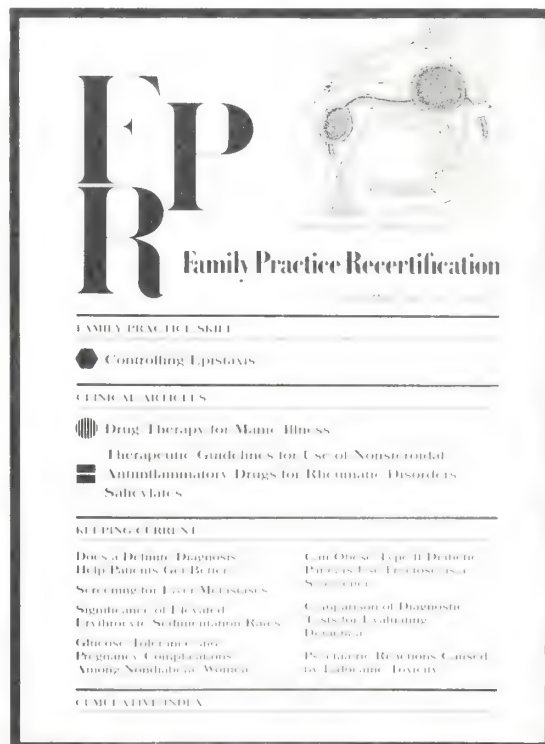
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CANCER CORNER

WILLIAM M. DUGAN, JR., M.D., Indianapolis

THE NATIONAL CANCER INSTITUTE (NCI) offers a publications list for health professionals. All NCI publications are available free of charge. Orders for publications are limited to three copies per title unless otherwise restricted. Because federal government publications are not subject to copyright restrictions, you may photocopy as many as you wish. The following publications are now available:

Anatomy Pad, limited to two per order, is a tear-off pad for physicians that includes front and side pictures of the breast. It is designed to teach the patient about the location and size of the lump. Each pad contains 25 sheets.

Anticancer Drug Information Sheets in Spanish/English were developed for Spanish-speaking cancer patients. Each sheet provides information about side effects, proper usage and precautions.

The Breast Cancer Digest: A Guide to Medical Care, Emotional Support, Educational Programs and Resources is a manual that was written for all members of the breast cancer health care team. The 212-page manual covers the medical and psychosocial aspects of breast cancer, including detection, diagnosis, treatment, rehabilitation and breast reconstruction.

The third edition of *Cancer Rates and Risks* is a compact guide to statistics, risk factors and risks for major cancer sites. This 136-page book includes charts, graphs showing incidence and a mortality section on the costs of cancer.

Irradiation-Related Thyroid Cancer is an informational 27-page booklet for physicians that provides guidelines for detection, diagnosis, treatment and follow-up of radiation-related thyroid cancer.

Coping With Cancer—A Resource for the Health Professional is a complete reference on the psychological and social aspects of cancer. This book summarizes the issues faced by cancer patients and their families and provides practical guidelines for care givers who respond to patients' and families' needs. The 145-page reference also describes support programs that are available throughout the country.

Diet, Nutrition & Cancer Prevention: A Guide to Food Choices provides information about foods that contain fiber, fat and vitamins that may affect a person's risk of getting certain cancers. It contains 39 pages.

The National Cancer Institute Fact Book presents general information about the National Cancer Institute, including budget data, grants, contracts and historical data.

Prenatal Diethylstilbestrol (DES) Exposure: Recommendations of the Diethylstilbestrol-Adenosis (Desad) Project for the Identification and Management of Exposed Individuals is a 31-page booklet that provides information on the health status of DES-exposed people, identification methods and plans for continuing examination and management.

Understanding the Immune System is a pamphlet describing the complex net-

work of specialized cells and organs that fight off disease caused by invading agents, such as bacteria and viruses, and how it sometimes malfunctions, resulting in a variety of diseases from allergies to arthritis to cancer. The 22-page pamphlet was developed by the National Institute of Allergy and Infectious Disease and printed by the National Cancer Institute.

Adult Patient Education in Cancer is a reprint that examines education for cancer patients and identifies the special educational needs of cancer patients. The 54-page book also discusses how to plan and evaluate the programs and activities used to meet the needs of cancer patients.

A Guide for Developing Public Education Programs on Breast Cancer is a 27-page booklet designed to provide direction for developing public information and educational materials and programs about breast cancer. It summarizes the most recent data available on public knowledge, attitudes and behavior related to breast cancer. It addresses the implications of these data for public information program planning and provides recommendations for program objectives, target audiences and communication strategies.

To order a publication, write to Publications Order, Office of Cancer Communications, National Cancer Institute, Building 31, Room 10A24, Bethesda, Md. 20892 or call 1-800-4-CANCER. Allow four to six weeks for delivery.

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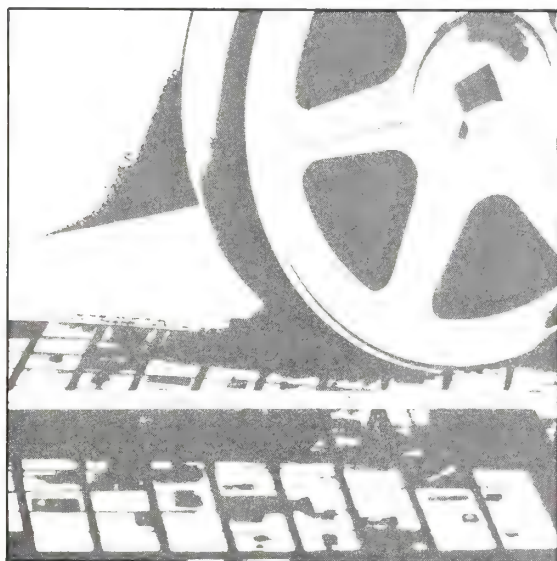


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AUXILIARY REPORT

Ann Wrenn, Bloomington
ISMA Auxiliary President 1988-89

THE ISMA AUXILIARY has developed a program to help first-year medical students understand and prepare for a career in medicine by talking to and spending time with established physicians. The goal of this student-physician family mentor program is to provide friendship, hospitality and support to the new members of the medical family.

Auxiliary president Ann Wrenn says the auxiliary has always operated as a support group but often missed the medical student. By providing insight about the medical profession and showing support to the newest members of the medical society, students are introduced to organized medicine in a positive way, Wrenn said.

The pilot program, headed by Susan Graffis, includes students from all nine regional medical school campuses. Currently, 110 students have expressed an

interest in the program.

The auxiliary is looking for physician families in the regional medical school campus communities to "adopt" a medical student. Families should be willing to invite the student at least three times a year to join them in a

meal or attend an athletic or cultural event. Any activity that provides an opportunity for interaction and discussion is encouraged.

For more information about this program or if you would like to participate, contact Susan Graffis at (317) 283-3888.

INDIANA STATE MEDICAL ASSOCIATION AUXILIARY Executive Committee—1988-1989

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Your ISMA Auxiliary is responding to the AMA's White Paper Report
by working statewide with projects and programs which are
impacting on the health problems of adolescents:

Victimization
Substance Abuse
Violence/Trauma
Sexuality/Pregnancy
Psychological Disorders/Suicide



The challenge is great and the auxiliary can use all the help it can muster . . .

**ENCOURAGE YOUR SPOUSE
TO BE ACTIVE IN AUXILIARY !**

Contact:
Ann Wrenn
ISMA A President
891 Woodcrest Drive
Bloomington, IN 47401
(812) 334-1876

CME QUIZ

TO OBTAIN ONE HOUR OF CATEGORY 1 AMA CME CREDIT, answer the following questions by circling the correct answer on the answer sheet below. Complete and clip the application form and mail it to: Indiana University School of Medicine, CME Division, BR 156, 1226 W. Michigan St., Indianapolis 46223.

Pulmonary Hypertension

CONTINUED FROM PAGES 13-17

1. Which of the following is associated with the neonate's transition from a fetal circulation to a postnatal circulation?
 - a. placental separation
 - b. mechanical distention of the pulmonary vasculature
 - c. increased oxygen content within the pulmonary arteries
 - d. closure of the foramen ovale
 - e. closure of the ductus arteriosus
 - f. all of the above
2. Which of the following is the principal pathophysiologic mechanism for persistent pulmonary hypertension?
 - a. persistently low systemic vascular resistance
 - b. patent ductus arteriosus
 - c. hypoxemia
 - d. persistent elevation in pulmonary vascular resistance
3. Which of the following factors are associated with a decrease in pulmonary vascular resistance?
 - a. alveolar atelectasis
 - b. alveolar ventilation
 - c. hypercarbia
 - d. alkalosis
4. Persistent pulmonary hypertension of the neonate is not associated with other clinical illnesses during the neonatal period.
 - a. true
 - b. false
5. Persistent pulmonary hypertension may be associated with which of the following?
 - a. vasoreactive pulmonary vasculature
 - b. pulmonary vascular hypoplasia
 - c. excessive pulmonary blood flow
 - d. all of the above
6. Which of the following is the hallmark of persistent pulmonary hypertension in the neonate?
 - a. cyanosis
 - b. tachypnea
 - c. pallor
 - d. oxygen lability
7. Which of the following tests is rarely utilized to make a diagnosis of persistent pulmonary hypertension?
 - a. hyperoxia test
 - b. simultaneous preductal and postductal arterial blood gases
 - c. hyperoxia-hyperventilation test
 - d. echocardiogram
 - e. cardiac catheterization
8. A 3.5 kg male infant is delivered through meconium-stained amniotic fluid at 42 weeks gestation. The nasopharynx, nares and trachea are suctioned for scant amounts of meconium-stained fluid. The infant is cyanotic and mildly tachypneic. What would you do first?
 - a. Perform preductal and postductal arterial blood gases.
 - b. Provide oxygen.
 - c. Perform a chest x-ray.
 - d. Check for hip dislocation.
9. Which one of the following is not typically found in neonates surviving severe persistent pulmonary hypertension?
 - a. bronchopulmonary dysplasia
 - b. neurosensory hearing loss
 - c. retinopathy of prematurity
 - d. seizures
 - e. abnormal neurodevelopmental exam
10. Neonatal stress factors associated with persistent pulmonary hypertension include which of the following?
 - a. hypertension
 - b. hyperviscosity
 - c. hypercalcemia
 - d. acidemia

DECEMBER CME QUIZ Answers

Following are the answers to the CME quiz that appeared in the December 1988 issue: "Epidural Abscess: A Review."

- | | |
|------|-------|
| 1. c | 6. a |
| 2. d | 7. c |
| 3. c | 8. b |
| 4. a | 9. d |
| 5. c | 10. c |

Answer sheet for Quiz: (Pulmonary Hypertension)

- | | |
|----------------|--------------|
| 1. a b c d e f | 6. a b c d |
| 2. a b c d | 7. a b c d e |
| 3. a b c d | 8. a b c d |
| 4. a b | 9. a b c d e |
| 5. a b c d | 10. a b c d |

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I wish to apply for one hour of category 1 AMA Continuing Medical Education credit through the I.U. School of Medicine. I have read the article and answered the quiz on the answer sheet above. I understand that my answer sheet will be graded confidentially, at no cost to me, and that notification of my successful completion of the quiz (80% of the questions answered correctly) will be directed to me for my application for the Physician's Recognition Award of the American Medical Association. I also understand that if I do not answer 80% of the questions correctly I will not be advised of my score but the answers will be published in the next issue of INDIANA MEDICINE.

To be eligible for this month's quiz, send your completed, signed application before Feb. 10, 1989, to the address appearing at the top of this page.

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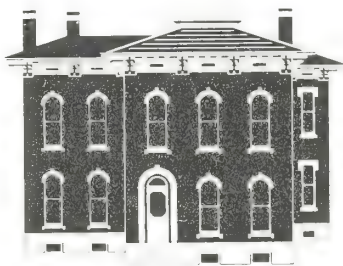
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NEWS NOTES

HealthNetwork To Expand Into Northwest Indiana

HealthNetwork, Inc., a Chicago-based Preferred Provider Organization (PPO), is assembling a provider network in northwest Indiana and plans to add to its five-hospital network of providers.

HealthNetwork, Inc. is sponsored by nine Chicago-area hospitals and has been fully operational since February 1985. Its market plan is to add a substantial number of employer contracts in northwest Indiana through its affiliations with insurance carriers, third-party administrators and a network of brokers.

CPC Valle Vista Opens Child Psychiatric Unit

CPC Valle Vista Hospital of Greenwood has opened a child psychiatric unit providing inpatient care for children ages 5 through 12 who are experiencing behavioral or emotional problems. Evaluation and referral services are available 24 hours a day, seven days a week at no charge.

For a tour of the facility, contact the Community Relations Department at (317) 881-1348.

Scholarships Available From Medical Directors

The American Academy of Medical Directors will award two scholarships worth \$3,000 each to physicians to attend management education programs. The scholarships are awarded annually for physicians who are employed by health care organizations that provide service in areas that are medically underserved or that rely predominantly on public or charitable funding.

Applicants must submit a letter of intent by Jan. 16.

For more information, contact Sherry M. Cumpstone, Director of Communications, One Urban Centre, 4830 W. Kennedy Blvd., Suite 648, Tampa, Fla. 33609-2517—(813) 287-2000.

Grant To Aid Program for Abused Children

The Indiana University School of Medicine has received a grant of approximately \$470,000 from the Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Division to establish a regional program to improve the care and outcome for abused and neglected children in Marion County over the next three years.

The major investigator is Roberta A. Hibbard, M.D., assistant professor of pediatrics, who has been recognized for her work toward the protection of children who have been neglected and abused.

Capital Consultants Publishes 'Health Alert'

Capital Consultants, Inc. is publishing a new monthly newsletter on health legislation titled *Health Alert*. The newsletter contains feature interviews and advisory columns. It is available for \$75 per year, or \$70 for a prepaid subscription.

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MDA Opens New Clinic at I.U. Medical Center

The Muscular Dystrophy Association has established a new clinic for patients in central Indiana.

The clinic, which is located at the Regenstrief Health Center in the Indiana University Medical Center, offers diagnostic services and follow-up care to adults who have any one of the 40 muscle disorders that MDA covers.

All patients are evaluated for their needs in orthopedic equipment and rehabilitative therapy. There is no cost to the patient or to the patient's family.

The clinic director is Rahman Pourand, M.D., director of neurology at Wishard Hospital.

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Here and There ...

Dr. Mitchell L. Bressack, Dr. James M. Platis and Dr. Nicholas C. Retson of Merrillville conducted a skin cancer screening at St. Anthony Medical Center in Crown Point.

Dr. Nancy W. Griffith of Mooreland won the *The New Castle Courier-Times* first "Today's Woman" contest.

Dr. Barbara M. Backer of LaPorte received a 25-year service award from the American Heart Association at its annual state awards program in Indianapolis.

Dr. Samuel E. Toney of Marion was certified as a diplomate of the American Board of Family Practice.

Dr. E. Allen Griggs, pathologist at Morgan County Memorial Hospital, gave a seminar in medical records law and an update on AIDS issues to the Indiana Medical Records Association.

Dr. Joseph W. Young of Franklin and Dr. Charles W. Link of Greenwood were presented a Pride and Progress Award by the Greater Greenwood Chamber of Commerce for renovation work done at their family practice office in Greenwood.



Dr. Richard M. Nay of Indianapolis received the Laureate Award from the Indiana Chapter of the American College of Physicians at a banquet at the Radisson Plaza Hotel; a coronary care unit at Methodist Hospital of Indiana is named after him.

Dr. James N. Gingerich of Goshen has been named a diplomate of the American Board of Family Practice.

Dr. Philip M. Coons of Indianapolis made several presentations on multiple personality disorder at the annual meeting of the International Society for the Study of Multiple Personality and Dissociation in Chicago, Ill. Dr. Coons also discussed the forensic use of hypnosis in multiple personality disorder at the annual meeting of the Society for Clinical and Experimental Hypnosis in Asheville, N.C.

Dr. Frederick A. Tolle, medical director of the Winona Sleep Disorders Center, presented a scientific exhibit at the ISMA Convention; the exhibit focused on nasal C-Pap treatment in 100 patients with obstructive sleep apnea.

Send your news items and comments to the Editor, INDIANA MEDICINE, 3935 N. Meridian St., Indianapolis 46208.

Dr. Randolph W. Lievertz of Indianapolis lectured on osteoporosis at a one-day CME course on the aging population presented by Thomas Jefferson University Medical College and Latrobe Area Hospital in Latrobe, Pa.

Dr. William G. Bannon of Terre Haute was re-elected to another term on the board of Valley Federal Savings Bank.

Dr. Jonathon D. Condit and Dr. Roberto J. Darroca of Muncie have been named diplomates of the American Board of Family Practice.

Dr. William H. Beeson of Indianapolis was selected to serve as secretary-elect during the fall meeting of the American Academy of Facial Plastic and Reconstructive Surgery in Washington, D.C.

Dr. Donald L. Yates, a Terre Haute ophthalmologist, received an award at the annual Terre Awards ceremony honoring volunteers for their outstanding service to the community; he received the award in the profession category.

Dr. Randall C. Morgan Jr. of Gary was re-elected secretary of the house of delegates of the National Medical Association.

Dr. Philip E. Prather of Kokomo, Dr. Claude J. Meyer of Sellersburg and Dr. Warren N. McClure of Kokomo attended the Annual Scientific Assembly of the American Academy of Family Physicians in New Orleans.

Dr. Adel H. Ayoub of Valparaiso traveled with a team of medical professionals to Beijing, People's Republic of China, to teach the Chinese state-of-the-art techniques in coronary bypass surgery.

Dr. C. Curtis Young Jr. of Evansville was recognized and roasted by more than 250 friends and colleagues at a dinner at the Bauerhouse in Darmstadt, Ind.

Physician Recognition Awards



The following ISMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned, and is acceptable proof in most states requiring CME in re-registration that the mandatory hours of CME have been accomplished.



Abrams, John H., Indianapolis
Acosta, Constancio B., Hobart
Ahlfeld, Steven K., Indianapolis
Alexander, C. Kurt, Muncie
Allen, Lawrence E., Anderson
Alonso, Robert J., Zionsville
Amodio, Frank J., Evansville
Ansari, Mohammad A., Muncie
Baker, Eldon E., Delphi
Breitenfield, Richard V., Muncie
Brunk, Glen A., Beech Grove
Chua, Gonzalo T., Carmel
Cockrell, D. Kete, Plainfield
Daftary, Ali A., Batesville
Day, Gustavo D., Evansville
Dick, William H., Indianapolis

Doepker, J.F. Jr., Evansville
Farag, Rafik S., Peru
Gunsenhouse, Jane, Carmel
Hamilton, Thomas G., Columbia City
Heaton, Gregory E., Madison
Hendricks, Eric A., Indianapolis
Holtzman, Paul W., Bloomington
Ireland, Philip H., Indianapolis
Jackson, Richard W., Beech Grove
Johantgen, Walter C. Jr., Carmel
Johnson, Phillip M., New Albany
Jones, Mark C., Evansville
Koo, Young S., Hammond
LeGrand, Daniel R., Indianapolis
Link, William C., Bloomington
Malachowski, Robert M., Indianapolis

McQuiston, Robert D., Indianapolis
Merkle, George W., Bluffton
Mohanty, Rajashree, Beech Grove
Nigh, Andrew D., Indianapolis
Parker, Francis W., Logansport
Ray, Alan S., Anderson
Rudolph, Kenneth J., Evansville
Sandock, Mark S., South Bend
Shah, Harish A., Merrillville
Silver, Richard A., Indianapolis
Stapp, Emily J., Jeffersonville
Van Buskirk, Edmund L., Lafayette
West, Samuel L., Michigan City
Wiethoff, Richard A., Seymour
Workman, Barbara E., Muncie
Yingst, Gisela J., Michigan City

OBITUARIES

Clyde G. Botkin, M.D.

Dr. Botkin, 72, a Muncie general practitioner, died Sept. 3 at Ball Memorial Hospital in Muncie.

He was a 1942 graduate of the Indiana University School of Medicine and an Army veteran of World War II.

Dr. Botkin was the Delaware County health officer from January 1972 to December 1987. He was a member of the Ball Memorial Hospital clinical staff and the American Academy of Family Physicians.

He retired from private practice in 1987.

Hiram T. Sexson, M.D.

Dr. Sexson, 68, Indianapolis, died Oct. 17.

He was a 1942 graduate of the Indiana University School of Medicine and had been a general practitioner in private practice 42 years. He was an Army veteran of the Korean War.

Dr. Sexson was a member of the Marion County Medical Society and several civic organizations. Before retiring in 1984, he had been on the staffs at St. Vincent and Winona Memorial hospitals.

Fred R. McCrea, M.D.

Dr. McCrea, 70, a retired Terre Haute radiologist, died Sept. 17 at his home.

He received his medical degree from Vanderbilt University in 1946 and served his residency in radiology at the Indiana University Medical Center.

Dr. McCrea was a former assistant chief of radiology at Veterans Hospital in Indianapolis and a former chief of radiology and former chief of staff at Union Hospital in Terre Haute. He was certified by the American Board of Radiology.

Archie E. Brown, M.D.

Dr. Brown, 81, formerly of Indianapolis, died Oct. 16 in St. Petersburg, Fla.

He was a graduate of the University of Arkansas School of Medicine. He was an Army Air Force flight surgeon during World War II.

Dr. Brown had been in private practice in Indianapolis 34 years before he retired in 1966. After retirement, he served on the medical staff at the Veterans Administration Regional Office two years.

J. Michael Gilson, M.D.

Dr. Gilson, 54, an Indianapolis radiologist, died Oct. 7.

He was a graduate of the University of Minnesota Medical School. He received the Mallickrodt fellowship in neuroradiology.

Dr. Gilson had been the assistant professor of radiology at Washington University in St. Louis. He had been on the staff at Methodist Hospital in Indianapolis since 1969.

William M. Browning, M.D.

Dr. Browning, 74, a retired Indianapolis pediatrician, died Oct. 22.

He was a 1941 graduate of the Indiana University School of Medicine and a veteran of World War II.

Dr. Browning practiced medicine 20 years before he retired in 1964. He was a former president of the Indiana State Medical Society and a member of the American Academy of Pediatrics.

Mathias S. Mount, M.D.

Dr. Mount, 85, a Bloomfield physician, died Nov. 12.

He was a graduate of the Indiana University School of Medicine and an Army Medical Corps veteran of World War II.

Dr. Mount had practiced medicine in Bloomfield 54 years before he retired in 1984.

Robert C. Speas, M.D.

Dr. Speas, 73, Terre Haute, died Oct. 8 at Union Hospital in Terre Haute.

He was a 1938 graduate of the Indiana University School of Medicine. He served in the Medical Corps during World War II.

He was certified by the American Board of Otolaryngology and was a member of the American Academy of Ophthalmology and the American Academy of Otolaryngology. He retired in 1979.

Memorials: Indiana Medical Foundation

The Indiana Medical Foundation, Inc. was formed by the Indiana State Medical Association "for religious, charitable, scientific, literary or educational purposes." It provides financial assistance to support the educational mission of Indiana Medicine.

Contributions made to the Foundation are deductible by donors in accordance with the Internal Revenue Code. Gifts are deductible for Federal estate and gift tax purposes.

The Foundation is pleased to acknowledge the receipt of gifts in remembrance of the following individuals:

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THE INDIANA MEDICAL FOUNDATION, INC.
3935 North Meridian Street
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A foundation for charitable, educational, and scientific purposes, organized by the ISMA as an endowment fund to support the educational mission of the Association and INDIANA MEDICINE.

Bequests, legacies, devises, transfers or gifts to the Foundation or for its use are deductible for federal estate and gift tax purposes, in accordance with the Internal Revenue Code.

The Foundation is managed by a board of directors that comprises the members of the ISMA Executive Committee. At present, proceeds from the Foundation investments are awarded to INDIANA MEDICINE to further the continuing medical education program.

Memorial contributions made to the Foundation in lieu of flowers will be acknowledged by the secretary in a letter to the family of the deceased.

*"for religious, charitable, scientific,
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Rejecting Advice Without Causing Resentment

by Arthur R. Pell, Ph.D., Consultant
Dale Carnegie & Associates, Inc.

When Art Winston was promoted to Supervisor of his department, it didn't take him long to realize that one of his key people, Jeff Jeffries was bitter about the situation. He had thought he would have been the one to be promoted. Art knew that if he were to succeed in his new job he would have to win Jeff over. A disgruntled Jeff would paralyze the department. One way to overcome resentment, Art felt, was to let Jeff know that he was important to the department and what better way to show this than by asking Jeff for advice.

A few weeks after he took over his new responsibilities, Art was faced with his first major crisis. He had some good ideas as to how to solve the problem, but he thought this would be a good time to work on obtaining Jeff's support. He outlined the problem to Jeff and asked if he had any ideas on how to solve it. Jeff thought for a minute and came up with his concept of how to handle the situation. Art realized at once that it would not work. But he also knew that if he rejected this suggestion, he would increase Jeff's resentment.

Margo Magee called her staff together to discuss a problem that they were facing on the job. After pondering about this for some time, Diane proposed a solution. Margo's immediate response: "We tried that before and it didn't work." Now it is true that they tried that before and it didn't work, but Diane may interpret this as "They don't want my ideas." Not only is she resentful, but may feel that there is no point in presenting ideas if they are going to be rejected.

In both cases, the supervisors were absolutely correct in not accepting the suggestions made, but in each case the rejection could lead to resentment and, equally important, the stifling of future ideas. Obviously, poor advice should not be accepted and all ideas are not necessarily good. We are far more likely to come up with a bad idea before we think a problem out clearly enough to develop a good one. Thomas Edison came up with 1000 bad ideas on how to make the light bulb work before he came up with a successful solution. Yet, we must learn to reject unworkable suggestions in a manner that will not cause resentment and will not stifle creativity.

Do It Privately

Never reject a person's suggestion in front of others. It causes them to lose face and be embarrassed in front of their peers. Thank them for the suggestion and tell them you will get back to them. Do this privately. In the Margo-Diane scenario, Margo might call Diane into her office later that day or as soon thereafter as feasible and go over the suggestion. After Diane repeats her suggestion, Margo should say: "Diane, we tried something like that two years ago and we had some problems with it."

Note the difference in the choice of words. Her first comment: "It didn't work." — That's final. There is no way this can be salvaged. The second approach: "We had some problems with it." Keeps the door open. The only possible response Diane can make to that comment is "What were the problems? Once Diane learns what caused the previous failure, she may respond, "I didn't think about that. I guess I should give this some more thought." Instead of repressing future ideas, we have encouraged her to keep thinking. Perhaps she may surprise Margo by saying: "I thought about those problems and I have solutions." After all, the boss may not have all the answers.

The Socratic Approach

Socrates never told one of his students that he was wrong. If one of Socrates' students came up with a wrong answer, Socrates asked another question. By carefully wording the questions, this great teacher encouraged his pupils to think out the problem and through this thought process reach the right solution.

This is still called the "Socratic Approach." By careful questioning by the supervisor, he or she can stimulate the person who made the suggestion to rethink and reevaluate what was suggested and come up with a more viable suggestion. In this way, you never have to reject an idea. By good questioning, the individual who suggested it will reject his or her own bad idea and replace it with a better one. There is no resentment and continued encouragement of employee ideation will result from this method.

Disagreement Without Pain

Gary is a very sensitive young man. He is one of those people who cannot accept criticism easily and becomes defensive when one of his ideas is turned down. He has just spent several days developing a new program for his section and has brought it to you, his boss, for what he expects will be not just approval, but congratulations. You find it is basically OK, but has several areas which need significant improvement. How can you convey this to Gary without causing him to blow up, become resentful and perhaps sulk for days?

Instead of pointing out the areas with which you disagree, first compliment him on all of the good points in his program. Then ask specific questions on the first area of disagreement. There are only three responses he can make to your questions. One response: "I hadn't thought about that. I had better review this and come up with a better approach." In this way, you encourage Gary to do what has to be done to make the program more workable.

Another possible response: "I hadn't thought about that. What should I do?" This type of response indicates that he agrees that his concept was not right, but instead of trying to solve it, he puts the monkey on your back. It is tempting to tell him what to do — and if it is a crisis situation, you may have to do this to get the job done on time. However, it is best to encourage people to solve their own problems. Your response should be: "Why don't you give this some more thought and we'll talk about it later in the week."

A third response: He answers your question and you realize that he was right and your objection was not valid. In this case, thank him for clarifying the matter and go on to your next question.

By questioning rather than criticizing, we can get the best from our people without resentment. The employee rejects his or her own bad ideas and is encouraged to come up with better ones. This will result in the honing of your people's creative skills and in obtaining more innovative ideas that will increase the effectiveness of your department.

Pocket/purse size reprints may be purchased (10 for \$10.00) or (25 for \$20.00) from Dale Carnegie & Associates, Inc., 1475 Franklin Avenue, Garden City, NY 11530

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FAMILY PRACTICE OPPORTUNITY—BC/BE: North Central Indiana; flexible ER schedule for fully accredited county hospital in return for exceptional income, opportunity to set up own zero overhead practice, comprehensive benefits with all factors negotiable to meet specific practitioner needs. Send CV or contact collect: James Wyatt, Corporate Staffing Resources, 420 South Fourth Street, Elkhart, IN 46516, (219) 522-2396.

INTERNIST BE/BC: North Shore Internal Medicine, PC is seeking an energetic general internist to enjoy the benefits of a rapidly expanding practice. New office close to hospital. Michigan State Medical School Campus. Send resume to 2420 First Avenue South, Escanaba, MI 49829—(906) 786-1563.

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LOCUM TENENS—Opportunities available throughout the country. Work part-time or full-time, at your convenience. Malpractice insurance, housing and transportation provided. Contact: LOCUM Medical Group, 30100 Chagrin Blvd., Cleveland, OH 44124 or call 1-800-752-5515.

RENT LUXURIOUS FLORIDA condominium, Hutchinson Island. Two bedroom, two bath. On golf course, pool, private beach. Call Tom Stayton, (317) 237-4535.

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INTERNIST—Indianapolis practice. Seeking internist with an interest in geriatrics. Excellent salary and benefits including CME and malpractice. Flexible scheduling. CV to Judy Burnett, 4930 N. Pennsylvania, Indianapolis, Ind. 46205.

CENTRAL INDIANA—Seeking director, full-time and part-time physicians for 58-bed hospital emergency department within one-hour drive of Indianapolis. Attractive hourly compensation and malpractice insurance provided. Benefit package available to full-time physicians. Contact Emergency Consultants, Inc., 2240 S. Airport Road, Room 20, Traverse City, Mich. 49684—1-800-253-1795 or in Michigan 1-800-632-3496.

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TRANSITIONAL YEAR RESIDENCY DIRECTOR—The Fort Wayne Medical Education Program is seeking a transitional year residency director. This physician will be responsible for the transitional year resident activities, curriculum and rotations at Lutheran Hospital, Parkview Hospital and St. Joseph Medical Center. This residency is a community-based, university-affiliated, ACGME accredited program. It is approved for four residents. The applicant is expected to present credentials establishing eligibility to apply for a clinical appointment with Indiana University School of Medicine. Applicant should be board certified in his/her specialty and possess a current unlimited license to practice medicine in Indiana. Inquiries, credentials and curriculum vitae, with references, to: Search and Screen Committee, Transitional Year Residency Director, Fort Wayne Medical Education Program, 2448 Lake Ave., Fort Wayne, Ind. 46805—(219) 422-6573.

ILLINOIS—Seeking a BC/BE orthopedic surgeon, unlimited potential, fine living environment, excellent area for swimming, boating, fishing and camping. Position carries a first-year income guarantee in the range of \$120,000. Benefit package included. Contact Bob Suleski, 250 Regency Court, Waukesha, Wis. 53186—1-800-338-7107.

STAFF PHYSICIAN, Ball State University, Muncie, Ind.—Staff physician reports to the director of the Student Health Center and provides primary out-patient diagnosis and treatment for regularly enrolled students and limited care for those university employees who experience job-related injuries. Counsels students about healthy lifestyle options, rotates with other physicians for night, weekend call, medical care for students confined to the in-patient facility and coverage at university activities. Participates in the collegiate community and maintains liaison with local physicians. M.D. degree and Indiana license required; several years experience in primary care preferred. Send letter of application and CV to Dr. Douglas McConkey, Vice-President for Student Affairs, Administration Building, Room 213, Ball State University, Muncie, Ind. 47306. Have each of three people send letters of recommendation. Review of applications begins immediately and continues until the position is filled. Applications are actively sought from women and other minorities. Ball State University practices equal opportunity in education and employment.

Commercial announcements are published as a service to members of the Indiana State Medical Association. Only ads considered to be of advantage to members will be accepted. Advertisements of a truly commercial nature (e.g., firms selling brand products, services, etc.) will be considered for display advertising.

All orders must be in writing and will automatically be set in regular classified type. Box numbers are not available.

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IMMEDIATE CARE PHYSICIANS WANTED—Need to be trained and/or experienced in areas of medicine which deal with acute/urgent care, such as minor trauma, acute illnesses and injuries, and physical exams in all age groups. No hospital work. Greater Indianapolis area. Well known group. Good salary/fringe benefit package. Contact: Michael D. Bishop, M.D., FACEP, Emergency Care Physicians, 640 S. Walker St., Ste. A, Bloomington, IN 47401—(812) 333-2731.

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Physicians or residents seeking practice opportunities may list their curriculum vitae with the Physician Placement Service at no charge.

PPS acts as a clearinghouse for communication between physicians and recruiters such as hospitals, clinics and physician groups. Since its establishment in 1987, PPS has assisted many physicians in locating practice situations.

For more information, contact Denise Le Doux, PPS coordinator, Indiana State Medical Association, (317) 925-7545 or 1-800-382-1721.

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If so please send change of address to Membership Dept., ISMA, 3935 N. Meridian St., Indianapolis Ind. 46208, at least six weeks before you move.

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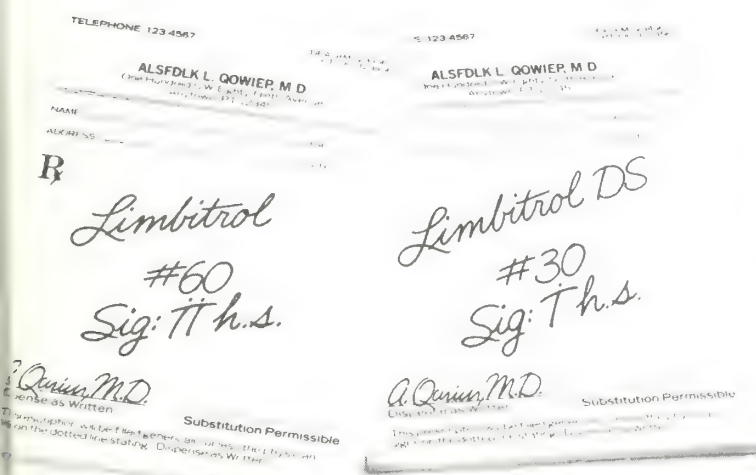
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In moderate depression and anxiety

74% of patients experienced improved sleep after the first *h.s.* dose¹

First-week improvement in somatic symptoms¹

50% greater improvement with Limbitrol in the first week than with amitriptyline alone²



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Specify "Do not substitute."

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Each tablet contains 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt) ^{IV}

Limbitrol DS[®]

Each tablet contains 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) ^{IV}

References: 1. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 2. Feighner VP. *Psychopharmacology* 61:217-225, Mar 22, 1979.

Limbitrol[®] Tranquilizer—Antidepressant

Before prescribing, please consult complete product information, a summary of which follows:

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants; concomitant use with MAOIs or within 14 days of monoamine oxidase inhibitors (then initiate cautiously, gradually increasing dosage until optimal response is achieved); during acute recovery phase following myocardial infarction.

Warnings: Use with caution in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur when used with anticholinergics. Closely supervise cardiovascular patients. Arrhythmias, sinus tachycardia, prolongation of conduction time, myocardial infarction and stroke reported with tricyclic antidepressants, especially in high doses. Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).

Usage in Pregnancy: Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations. Consider possibility of pregnancy when instituting therapy.

Withdrawal symptoms of the barbiturate type have occurred after discontinuation of benzodiazepines (see Drug Abuse and Dependence).

Precautions: Use cautiously in patients with a history of seizures, in hyperthyroid patients, those on thyroid medication, patients with impaired renal or hepatic function. Because of suicidal ideation in depressed patients, do not permit easy access to large quantities of drug. Periodic liver function tests and blood counts recommended during prolonged treatment. Amitriptyline may block action of guanethidine or similar antihypertensives. When tricyclic antidepressants are used concomitantly with cimetidine (Tagamet), clinically significant effects have been reported involving delayed elimination and increasing steady-state concentrations of the tricyclic drugs. Use of Limbitrol with other psychotropic drugs has not been evaluated; sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Should not be taken during the nursing period or by children under 12. In elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects. Inform patients to consult physician before increasing dose or abruptly discontinuing this drug.

Adverse Reactions: Most frequent: drowsiness, dry mouth, constipation, blurred vision, dizziness, bloating. Less frequent: vivid dreams, impotence, tremor, confusion, nasal congestion. Rare: granulocytopenia, jaundice, hepatic dysfunction. Others: many symptoms associated with depression including anorexia, fatigue, weakness, restlessness, lethargy. Adverse reactions not reported with Limbitrol but reported with one or both components or closely related drugs: **Cardiovascular:** Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke. **Psychiatric:** Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania, increased or decreased libido. **Neurologic:** Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns. **Anticholinergic:** Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract. **Allergic:** Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus. **Hematologic:** Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia. **Gastrointestinal:** Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue. **Endocrine:** Testicular swelling, gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female, elevation and lowering of blood sugar levels, and syndrome of inappropriate ADH (antidiuretic hormone) secretion. **Other:** Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

Drug Abuse and Dependence: Withdrawal symptoms similar to those noted with barbiturates and alcohol have occurred following abrupt discontinuance of chlordiazepoxide; more severe seen after excessive doses over extended periods; milder after taking continuously at therapeutic levels for several months. Withdrawal symptoms also reported with abrupt amitriptyline discontinuation. Therefore, after extended therapy, avoid abrupt discontinuation and taper dosage. Carefully supervise addiction-prone individuals because of predisposition to habituation and dependence.

Overdosage: Immediately hospitalize patient. Treat symptomatically and supportively. I.V. administration of 1 to 3 mg physostigmine salicylate may reverse symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

How Supplied: Double strength (DS) Tablets, white, film-coated, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt), and Tablets, blue, film-coated, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)—bottles of 100 and 500; Tel-E-Dose[®] packages of 100; Prescription Paks of 50.



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In the depressed and anxious patient

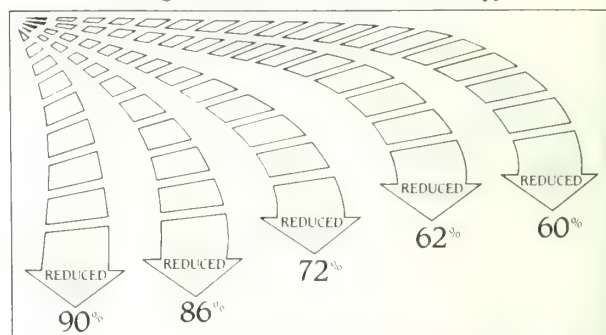
See Improvement In The First Week¹

And The Weeks That Follow

- 74% of patients experienced improved sleep after the first *h.s.* dose¹
- First-week reduction in somatic symptoms¹

Caution patients about the combined effects of Limbitrol with alcohol or other CNS depressants and about activities requiring complete mental alertness, such as operating machinery or driving a car. In general, limit dosage to the lowest effective amount in elderly patients.

Percentage of Reduction in Individual Somatic Symptoms During First Week of Limbitrol Therapy*



VOMITING NAUSEA HEADACHE ANOREXIA CONSTIPATION

*Patients often presented with more than one somatic symptom.

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FEBRUARY 1989

VOL. 82

NO. 2

INDIANA MEDICINE

The Journal of the Indiana State Medical Association



Maple Syrup Time in Indiana

In this issue:

- ➔ ISMA Sponsors Leadership Conference
- ➔ Expanded Prenatal Care Funding Sought

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for your professional
practice on March 1.

TPP is coming soon from PICI



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INDIANA MEDICINE

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FEBRUARY 1989

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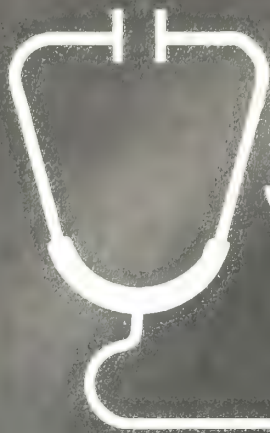
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ABOUT THE COVER

February signals maple syrup time in Indiana. Parke County
will be the site of the 26th Maple Syrup Festival the
weekends of Feb. 25 and 26 and March 4 and 5. Festival
headquarters, located at the 4-H Fairgrounds 1 1/2 miles
north of Rockville on U.S. 41, will be the site of pancake
and sausage breakfasts, arts and crafts displays and the
departure point for bus tours of maple syrup camps.





STETHOSCOPE

EXAMINING
STATE & NATIONAL
MEDICAL ISSUES

Four of seven Republicans who will serve on the reconstituted Senate Labor and Human Resources Committee will be new appointees. Among them is Indiana's newly appointed Sen. Dan Coats. Sen. Edward Kennedy has been reappointed as chairman of the committee. Three other members of the committee, Sen. David Durenberger, R-MN, Nancy Kassebaum, R-KS, and Paul Simon, D-IL, plan to reintroduce a concurrent resolution opposing cuts in Medicare Part A. AMA is on record in opposition to this continuing resolution because it would only serve to increase Congressional efforts to cut Medicare Part B (physician) payments. The goal of the cuts is to reach budget deficit reduction targets in 1990.

AMPAC initial Candidates Workshop of 1989 will be March 3-4 at the Four Seasons Hotel in Houston. The workshop is designed for physicians and spouses who are interested in running for public elective office at the local, state or national level. The faculty for the program includes high-level political figures, national consultants and AMPAC staff. Physicians and spouses interested in registering for the workshop should call Nancy Warren at AMPAC, (202) 789-7460. AMPAC will pay half the airfare for AMA members and their spouses and also will pay all costs of registration, scheduled meals and hotel rooms.

One of the emerging health issues is a hazard of our environment - radon. The AMA is joining with the EPA and various state medical associations to sponsor a series of seminars in 1989 for health and science professionals and community leaders. The seminars will cover the health effects and the personal and public concerns raised when radon is discovered in a community. The first Educational Day on Radon is Feb. 18 in Phoenix. Others will be held in Denver, Boston and Nashville. Registration is \$15. Six hours of continuing medical education credits are offered for the seminars. Call Vicki Grosso, Science and Technology, AMA, (312) 645-4574.

IN INDIANA...

More Hoosiers smoke today than they did in 1986. Indiana ranked the fourth highest in smokers in a 32-state national survey. Only Kentucky, Missouri and West Virginia ranked higher.

The statistics from the 1987 Behavioral Risk Factor Survey were announced by State Health Commissioner Woodrow Myers, Jr., M.D., at a news conference Jan. 11 to gain media attention for three tobacco bills that have been introduced into the Indiana General Assembly. The bills would prohibit tobacco sales from vending machines; require all public places to have designated non-smoking areas; and prohibit smoking in hospitals except with a physician's written order and in health facilities except upon a waiver from the State Board of Health. All the bills are part of the legislative package supported by ISMA through its House of Delegates. The initiative is part of ISMA's Tobacco-Free Society efforts.

If the House Public Policy Committee has anything to say about it, Indiana may again have a motorcycle helmet law. In a hearing Jan. 12, the committee voted 7-2 in favor of reinstating a law that would require all motorcyclists to wear helmets. ISMA's House of Delegates voted in 1985 to support reinstatement of the motorcycle helmet law. It has taken this long for such a bill to make this much progress through the legislature. ISMA will continue to monitor the progress.

More than 90 Montgomery County Medicare recipients have now been certified for the Medicare Assistance Program (MAP). The pilot program got underway last November as a vehicle to improve low income older persons' access to medical care. Under the program, Montgomery County physicians have agreed to accept the Medicare allowed amount as payment in full for older persons whose incomes are at 150 percent of the federal poverty level. Volunteers from local aging groups certify applicants for the program. Those accepted receive a card to show their doctor when they seek medical treatment. Certification of MAP applicants will continue this month in several rural areas of the county. The response from the public and the media to this program has been very favorable.

ISMA's second annual leadership conference March 11-12 will include a briefing on the Indiana General Assembly, a risk management seminar, intervention training, a seminar on grassroots lobbying and a managing the media workshop. The goal of the conference is to enhance the leadership skills of state, district and county officers. Brochures have been sent to all ISMA officers, trustees, alternate trustees and to county medical society leaders. If you did not receive a brochure and would like to attend, call Denise Le Doux at ISMA , (317) 925-7545.

MEDICAL MUSEUM NOTES

CHARLES A. BONSETT, M.D., Indianapolis



THE FIRST PAGE of *The Indianapolis News* Oct. 11, 1917, issue featured the following headline:

BOBBS MEMORIAL TABLET DEDICATED

Ceremonies Held in Medical Section
of the New Public Library
Speakers Join in Tribute

Dr. Jameson, Lewis Howland and
Dr. Gobin Praise Work of
Illustrious Surgeon

"In memory of Dr. John Stough Bobbs, founder of the city dispensary, a tablet bearing the inscription, 'Illustrious surgeon, patriotic citizen, self-sacrificing benefactor, servant of God, through service to mankind,' was dedicated this afternoon at the new public library.

"The ceremonies were held in the medical section of the library, at the east end of the main corridor where the tablet was put in place. Associates and followers of Dr. Bobbs in the old Indiana Medical College, who contributed to buy the tablet, participated in the exercises, which were largely attended.

"The tablet, aside from its silent tribute of appreciation to Dr. Bobbs, is expected by its sponsors to be a source of pride to Indianapolis residents because it is the work of Gutzon Borglum, among the foremost sculptors of the day, who now is engaged in carving a whole army into a mountainside near Atlanta, Ga. . ."

"Dr. Jameson in his introductory address said, 'We are assembled today in this noble library to dedicate a memorial to Dr. John Stough Bobbs, whose life and work will thereby be kept imperishably before us. This tablet is placed here in grateful remembrance by his colleagues in the institution of which he was one of the founders. . . .'"



The memorial to Dr. John S. Bobbs was originally located in the Central Library in Indianapolis.

Seventy-one years have passed since that dedication. Everyone who had participated in the occasion, including Gutzon Borglum, is gone, but history will soon repeat itself.

Ceremonies will be held soon in a new library building at the Indiana University Medical Center, and the sponsors of the event expect the Bobbs memorial not only to continue as a silent tribute of appreciation to Dr. Bobbs but also to be a source of pride to Indiana residents because it is the work of Gutzon Borglum, the American sculptor who carved Mount Rushmore in South Dakota.

Everyone knows of Mount Rushmore and its four gigantic faces of George Washington, Thomas Jefferson, Abraham Lincoln and Theodore Roosevelt. But not everyone recognizes the name of Gutzon Borglum or associates his name with this famous monument.

Other well-known works of Borglum include the Mares of Diomedes in New York City's Metropolitan Museum of Art; the head of Lincoln in the rotunda of the Capitol in Washington, D.C.; the statues of General Sheridan in Chicago and Washington, D.C.; and North Carolina's memorial statue at Gettysburg. The bas-relief memorial to Dr.

Bobbs is the only example of Borglum's work in Indiana.

Gutzon Borglum was born in St. Charles, Idaho, near the Utah border in 1867. His father, a frontier physician, made his daily rounds in a horse-drawn buggy, often with Gutzon at his side. By age 11, Gutzon was efficient in applying a rope tourniquet, holding a wound open while his father picked out the buckshot and assisting with other medical and surgical emergencies.

It wasn't his father's profession, however, for which Gutzon felt an affinity, but rather his father's artistic skill as a wood carver. Gutzon had a natural aptitude for art and an innate self-developed skill that enabled him to become self-supporting by the time he reached adulthood. He studied in France and was made a member of the National Society of Beaux Arts with a prize-winning painting. He then began sculpting and came under the influence of Auguste Rodin.

After returning to America, he opened a studio in California. Most of his time was spent doing commissions until he died in 1941 at the age of 74.

The committee that was responsible for the Bobbs plaque consisted of Dr.

CONTINUED ON PAGE 99

Museum Notes

CONTINUED FROM PAGE 98

Henry Jameson, Dr. A.W. Brayton, Dr. W.N. Wishard, Dr. John H. Oliver and Dr. Frank B. Wynn. No record of the committee's contact to Borglum has been found. The final statement on the Bobbs plaque is a quotation from *Ecclesiasticus* XXXVIII: 3, which also appears as the final statement in the last article Dr. Wynn ever wrote, published in the April 1922 issue of THE JOURNAL OF THE INDIANA STATE MEDICAL ASSOCIATION, just a few months before his death: "The skill of the physician shall lift up his head and in the sight of great men he shall be praised."

This quotation is appropriate not only to Dr. Bobbs but to all these physicians for their respective roles in the practice of medicine and the development of medical education in Indiana.

YOCON[®]

YOHIMBINE HCl

Description: Yohimbine is a 3a-15a-20B-17a-hydroxy Yohimbine-16a-carboxylic acid methyl ester. The alkaloid is found in Rubaceae and related trees. Also in *Rauwolfia Serpentina* (L) Benth. Yohimbine is an indolalkylamine alkaloid with chemical similarity to reserpine. It is a crystalline powder, odorless. Each compressed tablet contains (1/12 gr.) 5.4 mg of Yohimbine Hydrochloride

Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it, however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon[®] is indicated as a sympatholytic and mydriatic. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.^{1,2} Also dizziness, headache, skin flushing reported when used orally.^{1,3}

Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.^{1,3,4} 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.³

How Supplied: Oral tablets of Yocon[®] 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221, November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128 45-47, 1982

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Mallinckrodt, Inc. has introduced an advanced line of PTCA guiding catheters designed to provide a larger inside diameter and improved handling characteristics during angioplasty procedures. The new SOFTOUCH® Guiding Catheter offers the largest internal diameter of any 8F guiding catheter for improved handling and greater contrast media flow. Mallinckrodt has also introduced Clear-Shot™ Angioplasty Balloon Inflation Device.

Hewlett-Packard has introduced a ventricular angiography workstation that provides automated calculations and reports. This personal computer workstation, which costs about \$14,950, calculates ventricular volumes/indices, ejection fraction, stroke volume/index and segmental wall motion values. Its serial number is 5659A.

The Upjohn Co. recently received clearance from the U.S. Food and Drug Administration to market Ansaid tablets for the acute and long-term treatment of rheumatoid arthritis and osteoarthritis. Ansaid contains flurbiprofen and is the newest of the nonsteroidal, anti-inflammatory medications to be introduced in the United States. Clinical studies show flurbiprofen to be effective at much lower doses than ibuprofen and aspirin in inhibiting the body's production of prostaglandins, which produce inflammation. The drug should be used with caution in patients with current or past kidney or liver problems.

The Network for Continuing Medical Education has released a new video that advises physicians on medical risk management. The new telecourse was released in January to help physicians understand medical risk management issues and how to deal with them. The video advises physicians on how to identify critical risk exposure, develop appropriate charting techniques, address a jury if a case goes to litigation and what comprises a legal informed consent.

News of what is new in the medical supply industry is composed of abstracts from news releases by book publishers and manufacturers of pharmaceuticals, clinical laboratory supplies, instruments and surgical appliances. Each item is published as news and does not necessarily constitute an endorsement of a product or recommendation for its use by INDIANA MEDICINE or by the Indiana State Medical Association.

Bristol-Myers Oncology Division recently received approval from the U.S. Food and Drug Administration to market Platinol® -AQ, an aqueous formulation of Platinol® (cisplatin). The new formulation is a broad spectrum chemotherapeutic agent used in combination chemotherapy regimens for the treatment of metastatic testicular tumors, metastatic ovarian tumors and advanced bladder cancer. Platinol® -AQ comes in a protective package that contains spills in the event of breakage.

The SafeSkin™ Corporation recently announced it will produce latex examination gloves in a new state-of-the-art plant located in Malaysia, where most of the world's latex is produced. When the plant is completed, it will be able to produce 60 million gloves a month, or 5% of the U.S. glove market. The use of examination gloves has greatly increased in the United States because of the AIDS epidemic.

Roerig, a division of Pfizer Pharmaceuticals, reports that cefoperazone (Cefobid®), Roerig) in combination with tobramycin is effective against infections caused by gram-negative and gram-positive bacteria, which are increasing with hospitalized cancer patients. The random study compared the efficacy and toxicity of cefoperazone plus tobramycin and the Cancer Center's standard regimen of ticarcillin plus tobramycin as empiric therapy for febrile cancer patients. Cefobid is a third-generation cephalosporin that is administered either intravenously or intramuscularly.

Hewlett-Packard has introduced a new family of electrocardiogram safety-connector cables designed for patient safety and user convenience. The new cables enhance the performance of Hewlett-Packard's patient-monitoring systems, delivering a clear trace consistently and reliably. The cable has rugged construction, individual replacement leads and a variety of leadset options. The prices range from \$25 to \$100. The cables are expected to be available March 1.

Warner-Lambert Co. received approval from the U.S. Food and Drug Administration to market Cholybar (cholestyramine resin bar), which is used to lower blood cholesterol. Unlike the powdered form of cholestyramine resin, this unique product is a flavored, chewable bar of cholestyramine, a drug that reduces the incidence of heart attack and other forms of coronary heart disease. Cholybar is the only chewable prescription bar on the market.

Schering-Plough Corp. received approval from the U.S. Food and Drug Administration to market Intron A, a recombinant interferon alfa-2b used in the treatment of AIDS-related Kaposi's sarcoma. Schering also announced that it will limit the annual cost of Intron A treatment and provide Intron A treatment for financially indigent Kaposi's sarcoma patients.

Buraff Publications introduced *Emergency Department Law*, a new biweekly newsletter that provides information to help emergency departments become "malpractice proof." The publication is written by a practicing emergency physician who is also an attorney and risk manager. It is designed for emergency physicians, ED nurses, risk managers, EMS personnel, hospital administrators and hospital trustees. To subscribe to *Emergency Department Law*, write Buraff Publications, 2445 M Street N.W., Washington, D.C., 20037 or call (202) 452-7889.

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FUTURE FILE

Indiana University CME

The Indiana University School of Medicine will sponsor the following continuing medical education courses for February, March and April:

Feb. 20: Multidisciplinary Approach to the Pediatric Hearing-Impaired Population, University Place Executive Conference Center and Hotel, Indianapolis.

March 2: Infectious Diseases, Reid Memorial Hospital, Richmond, Ind.

March 15: Ob/Gyn Update, University Place Executive Conference Center and Hotel, Indianapolis.

March 17: Neurologic Update, University Place Executive Conference Center and Hotel, Indianapolis.

March 18-19: Annual Meeting, Indiana Society of Anesthesiologists and Anesthesia Update, University Place Executive Conference Center and Hotel, Indianapolis.

March 22: Stroke Workshop, Wishard Memorial Hospital, Myers Auditorium, Indianapolis.

March 29: Dermatology Update for the Non-Dermatologist, University Place Executive Conference Center and Hotel, Indianapolis.

March 30-31: 1989 Symposium on Mammography and Breast Ultrasound, University Place Executive Conference Center and Hotel, Indianapolis.

April 10-14: Electrocardiographic Interpretation of Complex Arrhythmias: A Physiological Approach, Krannert Institute, Indiana University Medical Center, Indianapolis.

April 19: Pulmonology Course, University Place Executive Conference Center and Hotel, Indianapolis.

April 20: Sports Medicine, Reid Memorial Hospital, Richmond, Ind.

April 20-21: 12th Annual Arthur B. Richter Conference: Post Traumatic Stress Disorders in Children and Adolescents, University Place Executive Conference Center and Hotel, Indianapolis.

For further information on these CME programs, call Melody Dian, assistant director, Continuing Medical Education, (317) 274-8353.

The *Journal of the American Medical Association* publishes a list of CME courses for the United States twice yearly. The January listing features courses offered from March through August; the July listing features courses offered from September through February.

Allergy and Immunology

The 45th annual meeting of the American Academy of Allergy and Immunology will be Feb. 24 to March 1 in San Antonio, Texas. The conference will address the latest developments in and treatment techniques for asthma, and allergic and immunologic diseases.

For additional information, call Sarah E. Kaluzny at (414) 272-6071.

University of Wisconsin CME

The University of Wisconsin School of Medicine has announced two upcoming continuing medical education programs.

"Comprehensive Management of Chronic Respiratory Problems" is the title of the March 16-17 program at the Sheraton Inn and Conference Center in Madison. Group sessions will address the management of patients with chronic respiratory problems.

An "Update in Internal Medicine" will be April 8 at the University of Wisconsin Clinical Science Center in Madison.

For information, contact Cathy Means, Continuing Medical Education, 2715 Marshall Court, Madison, Wis. 53705—(608) 263-6637.

NIH Conference

The National Institute of Dental Research and the National Institutes of Health will conduct a Consensus Development Conference on "Oral Complications of Cancer Therapies: Diagnosis, Prevention and Treatment." The conference will be April 17 through 19 in Bethesda, Md.

For information, call (301) 468-MEET.

Methodist Hospital CME

Feb. 18: Fracture Management, Methodist Hospital.

Feb. 22: Worker's Compensation Program for Physicians, Methodist Hospital, auditorium.

March 10-12: 5th Annual Symposium on SWL: Urinary and Biliary, Westin Hotel.

April 7-8: Advanced Cardiac Life Support, Methodist Hospital, Wile Hall.

April 21-22: Advanced Trauma Life Support, Methodist Hospital, Wile Hall.

April 28-29: Gynecology Symposium, Methodist Hospital.

May 12: 1989 Overview of Solid Organ Transplantation, Hyatt Regency, Indianapolis.

May 18-19: 24th Annual Batman Lecture, Methodist Hospital, auditorium.

June 29-30: 15th Annual Wishard Lecture, Methodist Hospital.

For information, contact Dixie Estridge, CME Coordinator, Methodist Hospital of Indiana, Graduate Medical Center, 1701 N. Senate Blvd., P.O. Box 1367, Indianapolis, Ind. 46206—(317) 929-3733.

University of Michigan CME

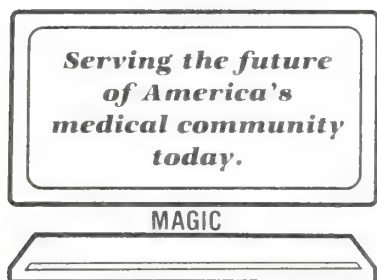
The Office of Continuing Medical Education of the University of Michigan Medical School is sponsoring an upcoming course titled, "The Restenosis Summit: An International Symposium with Live Demonstrations."

This two-day symposium will bring together more than 20 leading scientists and clinical investigators to discuss future prospects and strategies for reducing recurrence after coronary angioplasty. The summit will be May 11 and 12 at the Towsley Center in Ann Arbor, Mich.

For additional information, contact Debra DeSmyther, Program Assistant, Office of CME, Towsley Center-Box 0201, University of Michigan Medical School, Ann Arbor, Mich. 48109-0201 or call (313) 763-1400.

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Summary.

Consult the package literature for prescribing information.

Indication Cefaclor is indicated for the treatment of respiratory tract infections, including pneumonia caused by *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Streptococcus pyogenes* (group A β -hemolytic streptococci).

Contraindication Known allergy to cephalosporins.

Warnings Cefaclor should be used with caution in patients with a history of gastrointestinal disease, particularly colitis. Cefaclor should be used with caution in patients with a history of allergic reactions to penicillins or cephalosporins.

Administer cautiously to allergic patients.

Pseudomembranous colitis has been reported with virtually all broad spectrum antibiotics. It must be considered in differential diagnosis in patients who have received broad spectrum antibiotic treatment, possibly resulting in antibiotic-associated colitis.

Precautions

- Discontinue Ceclor in the event of allergic reactions to it.
- Prolonged use may result in overgrowth of nonsusceptible flora.
- Positive direct Coombs' tests have been reported during treatment with Ceclor.
- Cefaclor should be used with caution in patients with a history of allergic reactions to penicillins or cephalosporins.

moderate to severe renal impairment are usually not required; careful clinical observation and laboratory studies should be made.

- Broad-spectrum antibiotics should be prescribed with caution in individuals with a history of gastrointestinal disease, particularly colitis.

- Safety and effectiveness have not been determined in pregnancy, lactation, and infants less than one month old. Ceclor penetrates mother's milk. Exercise caution in prescribing for these patients.

Adverse Reactions

(percentage of patients)
Therapy-related adverse reactions are uncommon. Those reported include:

- Gastrointestinal (mostly diarrhea) 2.5%
- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
- Hypersensitivity reactions (including morbilliform eruptions, pruritus, urticaria, and serum-sickness-like reactions that have included erythema multiforme [rarely, Stevens-Johnson syndrome] and toxic epidermal necrolysis or the above skin manifestations accompanied by arthritis/arthralgia, and frequently, fever) 1.5%, usually subside within a few days after cessation of therapy. Serum-sickness-like reactions have been reported more frequently in children than in adults and have usually occurred during or following a second course of therapy with Ceclor. No serious sequelae have been reported. Antihistamines and corticosteroids appear to enhance resolution of the syndrome.

- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
 - As with some penicillins and some other cephalosporins, transient hepatitis and cholestatic jaundice have been reported rarely.
 - Rarely, reversible hyperactivity, nervousness, insomnia, confusion, hypertonia, dizziness, and somnolence have been reported.
 - Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1%; and, rarely, thrombocytopenia.
- Abnormalities in laboratory tests of uncertain etiology:
- Slight elevations in hepatic enzymes.
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As an organization accredited for continuing medical education, the Indiana University School of Medicine certifies that this CME activity meets the criteria for one credit hour in Category 1 for the Physician's Recognition Award of the American Medical Association, provided it is used and completed as designated.

To obtain Category 1 credit for this month's article, complete the quiz on page 135.



Systemic Side Effects of Glaucoma Medications

LOUIS B. CANTOR, M.D.
Indianapolis

FOUR CLASSES OF drugs are commonly used to treat glaucoma: parasympathomimetic agents (pilocarpine, Phospholine Iodide), sympathomimetic agents (epinephrine, Propine), beta adrenergic blocking agents (Timoptic, Betoptic, Betagan), and carbonic anhydrase inhibitors (Diamox and Neptazane). A wide variety of local and systemic side effects, which may be mild, severe or fatal, may be associated with any one of these classes of medications. Since the carbonic anhydrase inhibitors are taken orally, the systemic side effects associated with these drugs are more widely appreciated. However, since the parasympathomimetic, sympathomimetic and beta adrenergic blocking agents are all used in drop form, neither the patient nor the physician commonly considers them as a cause of systemic problems, when in fact

these agents frequently may cause a wide variety of systemic side effects. It is essential that the use of these medications be known to the patient and the patient's physicians, and potential side effects be known and recognized when they occur.

Parasympathomimetic Agents

The parasympathomimetic agents frequently do not cause systemic side effects, but patients can develop several disturbing symptoms. The most common systemic side effects are gastrointestinal in nature; anorexia, nausea, abdominal pain, diarrhea and especially cramps. At times, these symptoms may be severe. Gastrointestinal evaluation and gastroscopy have been performed for problems related to the use of a parasympathomimetic eyedrop. Bradycardia may also be a possible side effect. Asthmatics and

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other patients with reactive pulmonary disease may experience difficulties as these agents may precipitate bronchospasm by affecting the bronchial smooth muscles. These agents also may affect the musculoskeletal system, causing tremor and muscular irritation. In addition, patients may experience restlessness and irritability due to central nervous system effects.

One parasympathomimetic agent that deserves special mention is Phospholine Iodide (echothiophate iodide), which is an irreversible inhibitor of serum cholinesterase. This agent may have long-lasting effects that may persist up to one month following cessation of the drop. Prolonged apnea and paralysis may result if succinylcholine is used during general anesthesia and if Phospholine Iodide had not been discontinued at least two weeks before the anesthesia. Patients using this drug also should be cautioned about exposure to organophosphate insecticides because there may be a cumulative effect on cholinesterase inhibition that may produce systemic toxicity.

Beta-Adrenergic Blocking Agents

Beta-adrenergic blocking agents are the most commonly used drugs for the treatment of glaucoma. Timoptic (timolol) and Betagan (bunolol) are nonselective beta blockers, whereas Betoptic (betaxolol) is a selective beta-one adrenergic blocking agent. These drugs are all applied topically and can have a wide range of systemic side effects.

Of all the eyedrops used to treat glaucoma, these medications are the most comfortable; therefore, patients rarely associate use of these drugs with a systemic side effect. Of particular concern are patients with pre-existing asthma or chronic obstructive pulmonary disease with a bronchospastic component who may be severely affected by topically applied beta blockers. All of these agents may exacerbate bronchospasm, and more than 30 deaths have been reported due to status

asthmaticus and respiratory failure. Asthmatic complications also may develop in patients with no known asthmatic condition. The systemic side effects of the selective beta adrenergic blocking agent, betaxolol, are fewer. This agent may be tolerated by some patients, though selectivity is relative and severe complications may still result.

Topical beta blockers also affect the cardiovascular system, most frequently causing bradycardia. This condition should be suspected by both the ophthalmologist and other physicians. Congestive heart failure and acute pulmonary edema resulting in death have been associated with the use of these medications. Cardiac pacemakers also have been implanted due to beta blocker-induced bradycardia, which might have been reversible with cessation of the drug.

Frequently overlooked but relatively common systemic side effects of topical beta blocking agents are due to effects on the central nervous system. Disorientation and headache are common. In older patients these systemic side effects may be particularly incapacitating. Patients also may report vivid visual hallucinations and abrupt changes in mood and intellectual function.

Another relatively common side effect that is being appreciated more is impotence. Patients do not often volunteer this symptom, but when asked, patients may indicate significant problems. Other systemic side effects may include hypoglycemia and exacerbation of myasthenia gravis. Beta blockers also are concentrated in breast milk, and nursing mothers may inadvertently deliver toxic levels to their infants.

Sympathomimetic Agents

The sympathomimetic agents commonly cause local ocular irritation and allergy. Although systemic side effects are relatively uncommon, they are important. In the past, epinephrine was the agent used, and adrenergic side ef-

fects were noted with these drugs. With the recent introduction of a pro-drug of epinephrine (Propine, Dipivifrin) the systemic side effects have been reduced significantly. However, the sympathomimetic agents may cause cardiac irritability, palpitations and tachycardia. Cerebrovascular accidents also have been associated with the use of these drugs. Headaches, anxiety and tremor also have been reported in some individuals.

Carbonic Anhydrase Inhibitors

The carbonic anhydrase inhibitors currently are not available in drop form and therefore must be taken orally. These drugs are potent cell poisons and cause a wide variety of systemic side effects. For these agents to have an effect on lowering intraocular pressure, the activity of the enzyme carbonic anhydrase must be inhibited by at least 99% of the entire body. The side effects are usually dose-related but may occur after only one dose or after prolonged use of the medication. The most commonly reported side effects are depression, confusion, malaise, fatigue, insomnia, anorexia, nervousness, irritability and weight loss. These symptoms are almost always present to some extent. The depression mimics the classic psychiatric depression, and patients on carbonic anhydrase inhibitors have been known to attempt suicide while on the medication. Unfortunately, patients rarely associate their emotional disturbances with use of the drug, and not all physicians are always aware of the potential for these side effects.

Patients treated with acetazolamide develop renal stones at least twice as frequently as individuals not on the drug. Once a patient has developed a renal calculus on acetazolamide, there is a 50% chance of recurrence of the calculus if the drug is continued. Occasionally, a patient may be switched to a different carbonic anhydrase inhibitor (methazolamide), but in most cases, cessation of the drug becomes necessary. At the beginning of therapy,

polyuria is common, but this does not last long in most individuals.

Acid-based disturbances will occur to some degree in all patients on carbonic anhydrase inhibitors. Patients on diuretics or other agents that cause a metabolic imbalance need to be watched very closely. These agents cause a metabolic acidosis and may significantly increase the side effects for both medications. The combination of acetylsalicylic acid and a carbonic anhydrase inhibitor is an example of this reaction. Hypokalemia from potassium loss is another effect of carbonic anhydrase inhibitors that may be exacerbated by the use of other drugs such as thiazides or corticosteroids.

Gastrointestinal effects including diarrhea, constipation, anorexia and nausea are very common and dose-related. In some patients these symptoms may be severe and debilitating and may appear to mimic an infectious disorder.

Nearly all patients who start carbonic anhydrase inhibitors experience paresthesias, but these symptoms usually improve. Mostly commonly, these paresthesias are perioral or affect the hands and feet.

Since the carbonic anhydrase inhibitors are sulfonamides, dose-related skin reactions are common. The lesions are usually erythematous and pruritic and may be isolated or confluent. These

agents also may elevate liver enzymes, interfere with oral diabetic agents and cause tinnitus. In addition, these drugs have not proven to be safe in women of childbearing age and must be considered teratogenic. One particularly disturbing side effect is an occasional idiosyncratic reaction, which causes severe bone marrow suppression and leads to death in 50% to 80% of cases. The cause of this reaction is unknown, not dose-related and, in many cases, not reversible with cessation of the drug.

Summary

A brief review of the common systemic side effects of the various medications used to treat glaucoma on an outpatient basis has been presented. This review is not complete, and the variety of side effects that may be caused by these drugs is extensive. Because it is usual for glaucoma patients to use several different drugs concurrently, the range of possible side effects in a given individual is large and serious. Not only should the ophthalmologist be familiar with the side effects of these medications, but all physicians involved in the patient's care should be aware of the glaucoma medications being used and consider these medications when the patient has symptoms or complications. Because the patient rarely associates the use of an eyedrop with problems in his or

her general health, it is especially incumbent upon the physician to suspect and recognize these problems. Physicians should also elicit problems that the patient may not even complain of so alterations in therapy may be made.

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RADIOLOGY CLINIC

SECTION EDITOR:
Robert D. Tarver, M.D.
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Foot Pain in a Diabetic Patient

KARL M. BAIRD¹
ETHAN M. BRAUNSTEIN, M.D.²
Indianapolis

ulation, collectively known as the Lisfranc joint, present a diagnostic and therapeutic challenge. These injuries are not common, but they have a high

potential for long-term secondary disability. The radiologic diagnosis is overlooked in as many as 20% of the cases.

A 52-YEAR OLD insulin dependent diabetic woman presented for evaluation of a swollen, red, left foot. The swelling had begun about 20 days earlier, and there had been no history of trauma. She had been treated with antibiotics for presumed cellulitis. There was no fever. Pain was minimal, but the patient walked with a limp. A radiograph at the time was reported to be normal.

Physical examination revealed pitting edema of the left foot and erythema of the medial and dorsal foot. The patient was afebrile, and the white count and differential were normal. A radiograph was obtained.

What's your diagnosis?

Discussion

The radiograph shows a fracture-dislocation of the left foot. This is a neuropathic Lisfranc dislocation in a diabetic. Notice the normal anatomic relationship at the first tarsometatarsal joint and the lateral displacement of the second through fifth metatarsals.

Injuries of the tarsometatarsal artic-



**Patient's
Radiograph
on Admission:
What Is
The Patient's
Problem?**

¹Fourth-year medical student, Indiana University School of Medicine.

²Professor of Radiology, Indiana University School of Medicine.

RADIOLOGY CLINIC

CONTINUED FROM PRECEDING PAGE

Injuries to this region may result from either direct forces such as crush injuries, or more commonly from indirect forces. When the foot is plantar flexed, an axial load may disrupt the joint along the dorsal aspect. Concomitant inversion, eversion or rotation may add medial or lateral dislocation. Patients may present with pain, swelling and inability to bear weight.

Repetitive subclinical trauma in patients with neuropathic disorders may produce variations of the Lisfranc fracture-dislocation, as it did in this patient. Although in the past syphilis was a frequent cause of such findings, today diabetes is the most common cause of neuropathic Lisfranc dislocations. Motion at the joint is abnormal, and there is soft tissue swelling.

There are three basic dislocation patterns—complete disruption of the Lisfranc joint, partial disruption or divergent disruption. In many partial disruptions, there is some combination

of displacement of one or more of the four lateral metatarsals. This was the case in our patient. In a divergent dislocation, the first metatarsal is displaced medially and the others are displaced laterally. Fractures of tarsals and metatarsals, particularly of the base of the second metatarsal, are frequently associated.

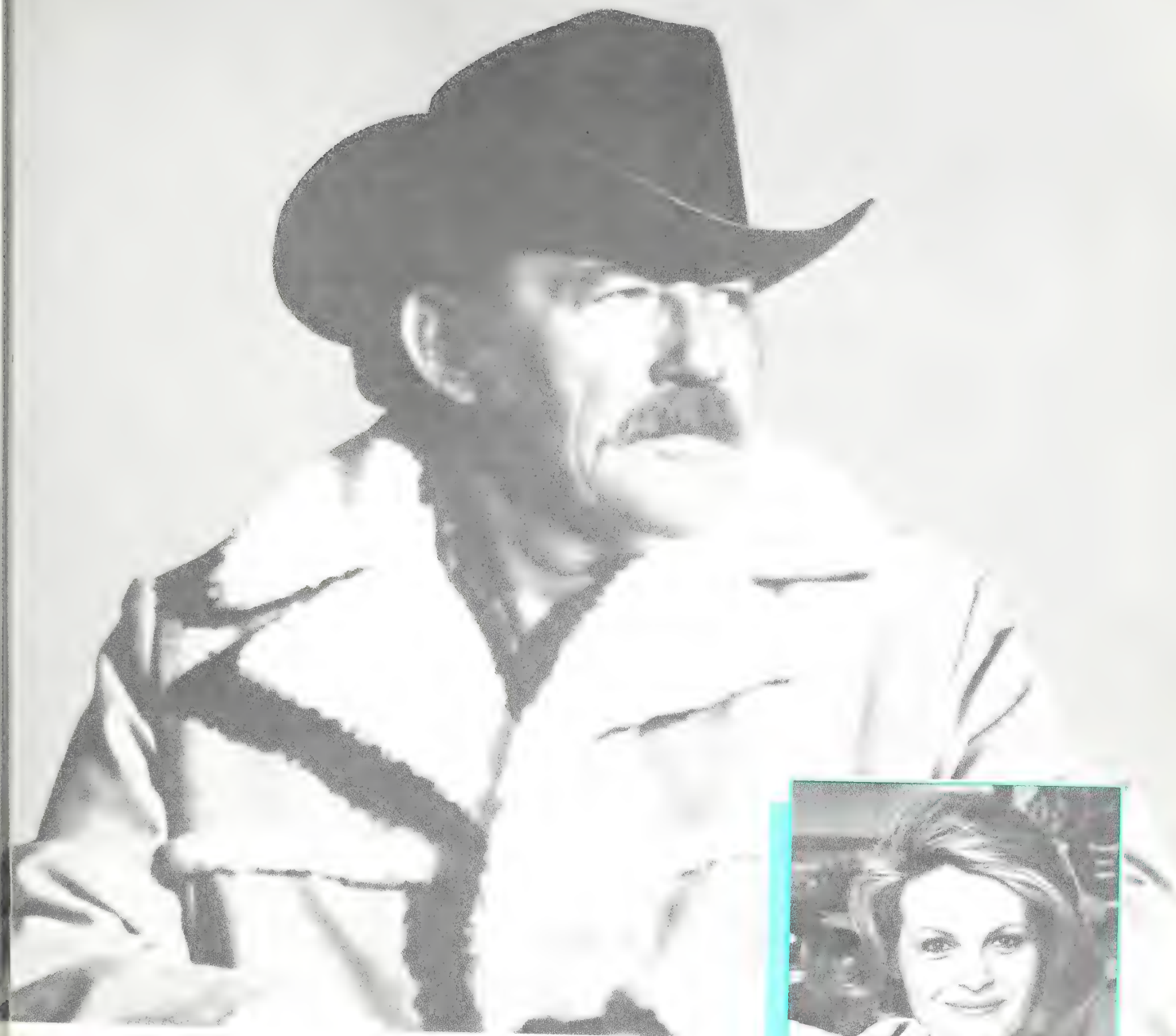
In the radiographic diagnosis, the relationships of the second metatarsal are most important, as the medial edge of the second metatarsal should be aligned with the medial edge of the second cuneiform. Although the medial border of the fourth metatarsal frequently is aligned with the cuboid, this and the other tarsometatarsal relationships are less consistent. Radiographic changes of a neuropathic (Charcot) joint may also be present. There may be disintegration of the joint surfaces with subluxation, subchondral sclerosis, fragmentation and loose bodies.

Treatment of Lisfranc fracture-dislocations depends on anatomic reduction until the soft tissue injuries

and fractures are able to heal. Particularly patients with neuropathic Lisfranc dislocations may benefit from arthrodesis, but this is difficult to achieve at the tarsometatarsal joints. In diabetic patients, poor circulation may be an indication for conservative management. This patient was treated with a closed reduction, and follow-up continues.

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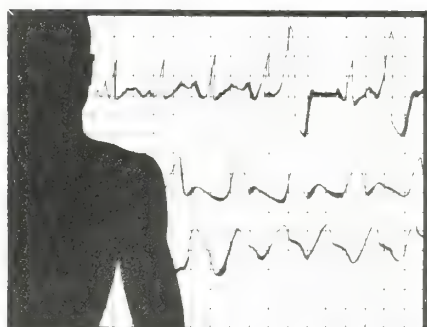
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Acute Gallbladder Disease in the Critical Care Patient



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WILFREDO J. SUNTAY, M.D.¹
GONZALO T. CHUA, M.D.²
Indianapolis

IN THE GENERAL population, acute acalculous cholecystitis accounts for only 2% to 15% of cases of acute cholecystitis.¹ Although uncommon among all patients, acute acalculous cholecystitis occurs in a high percentage of patients sustaining prolonged critical illness, accounting for 50% to 100% of cases of acute cholecystitis.^{2,3,4} It is often associated with such predisposing conditions as previous surgery, massive trauma, burns, sepsis, cardiovascular disorders and malignancy. It has been suggested that the significant difference in the incidence of acute acalculous cholecystitis is related to the prolonged survival of severely ill and traumatized patients secondary to improved intensive care.³ Acute acalculous cholecystitis in this patient group often also is associated with a higher morbidity and mortality,¹ and an increased incidence of gangrene and perforation of the gallbladder.

Because of this increased morbidity and mortality, prompt diagnosis and treatment are necessary. Unfortunately, both clinical and laboratory methods of diagnosis lack sensitivity and specificity. Various radiological imaging modalities are valuable in the diagnosis of this potentially dangerous and illusive disease.

Diagnosis

Clinical Presentation—The signs and symptoms of acute acalculous cholecystitis do not differ from those of acute

cholecystitis with stones. The most common symptom is pain in the right upper abdominal quadrant. Other findings are vomiting, abdominal distention, loss of bowel sounds, abdominal rigidity and tenderness, unexplained fever and jaundice.^{2,4}

Elevated white blood cell count, serum glutamic oxaloacetic transaminase (SGOT) and alkaline phosphatase are common laboratory findings. Elevation of bilirubin was also noted in 65% of critically ill patients but was also seen in 64% of control groups who received greater than 10 units of blood^{2,4} and is, therefore, not as useful diagnostically.

These clinical and laboratory findings unfortunately may be nonspecific in a group of severely ill patients. Greater reliance is therefore placed on radiologic studies.

Real-Time Ultrasonography—Real-time ultrasonography has been shown to be accurate in assessing suspected acute cholecystitis. Sonography has a sensitivity of 81% to 92% and a specificity of 60% to 96% in the diagnosis of acute acalculous cholecystitis.^{1,5} The major diagnostic criteria are shown in the Table.^{5,6,7,8,9,10,11}

Hepatobiliary Scintigraphy—Hepatobiliary scintigraphy has been shown to have a sensitivity of 91% to 97% and a specificity of 38% to 99%.^{1,6,12,13} The 38% specificity has been shown in posttrauma patients.⁶ Three to five millicuries of technetium-99m labeled IDA (iminodiacetic acid) analogs are injected intravenously and five minute serial gamma camera images of the abdomen are obtained for one hour. The criteria used for the diagnosis of cholecystitis are as follows: Presence of radioactivity in the small bowel without visualization of the gallbladder

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within four hours represents acute cholecystitis; visualization of radionuclide within the gallbladder after more than one hour represents chronic cholecystitis.

Computed Tomography (CT)—A limited study has shown both the sensitivity and specificity of computed tomography in diagnosis of acute acalculous cholecystitis to be 100%.⁶ Major criteria include wall thickening greater than 4 mm, pericholecystic fluid or subserosal edema without ascites, intramural gas or sloughed mucosa.

Ultrasound or CT Guided Percutaneous Aspiration of Bile—In a small series, diagnostic percutaneous aspiration of the gallbladder showed that cultures are positive within 24 hours after onset of symptoms in only 30% of patients undergoing gallbladder surgery, but are positive in 80% to 100% 72 hours after symptoms begin if surgery is delayed.¹⁴ Aspirations are performed by using a 20- or 22-gauge aspiration needle and a lateral transhepatic approach (right anterior axillary line).¹⁴ No complications have been reported. Recent studies have shown the sensitivity of this technique to be insufficiently small at 33% and 48% in the diagnosis of acute acalculous cholecystitis.^{14,15}

Treatment

Although early cholecystectomy is the treatment of choice for acute cholecystitis, critically ill patients are at high risk when undergoing surgery. Complicating factors such as concurrent cardiorespiratory disease, immunosuppression and metabolic imbalance raise the operative risk. Surgical cholecystostomy long has been recognized as beneficial in patients with acute cholecystitis who are not candidates for cholecystectomy.¹⁷

With the advent of ultrasonography and computed tomography, ultrasound and CT guided percutaneous cholecystostomy has been shown to be a useful temporizing procedure and may even make further surgical therapy un-

<p style="text-align: center;">TABLE Diagnostic Criteria of Acute Cholecystitis From Real-Time Ultrasonography</p>	
1.	Thickening of the gallbladder wall greater than 4 mm when the gallbladder is distended at least 5 cm in its longitudinal dimension.
2.	Presence of pericholecystic fluid.
3.	Presence of the "double wall sign"—a hypoechoic or sonolucent area within the wall of the gallbladder representing inflammatory changes such as edema, blood or cellular infiltration in the subserosal layer.
4.	The "halo sign"—a halo of low level echoes between the echo free gallbladder lumen and the confluent high level echoes of the gallbladder wall representing sloughed mucosa.
5.	A positive "sonographic Murphy's sign"—present when tenderness is maximal over the sonographically localized gallbladder. A negative Murphy's sign is present when tenderness is diffuse or present in a location distant from the gallbladder.
6.	Complete lack of response to cholecystokinin.
7.	Intramural gas.

necessary. The procedure is simple and safe.¹⁶ With the use of ultrasound, it can be performed as a bedside procedure with minimal risk to the critically ill patient.

Under real-time ultrasonic guidance, an 8 French pigtail catheter is localized within the gallbladder via a lateral transhepatic approach. This approach has the theoretical advantage of less chance of bile leakage.¹⁶ This procedure also can be performed under CT guidance. After introduction, the catheter is attached to an external drainage bag. Several studies have shown that the percutaneous transhepatic drainage catheter can be left in place for a considerable period, even as long as 12 months.¹⁸ Several follow-up studies emphasize the importance of postdrainage cholangiography and have shown that patients with a normal postdrainage cholangiogram did not have recurrent disease after the removal of the drain.¹⁶

Discussion

Because of the increased morbidity and mortality in patients with acute acalculous cholecystitis, early diagnosis and treatment are necessary. Clinical findings and laboratory tests are nonspecific, and therefore a high index

of suspicion is required. Even those radiologic imaging techniques previously discussed have limitations.

With ultrasonography, gallbladder wall thickening and the "double wall sign" are not only seen in acute cholecystitis but also in patients with ascites, hypoalbuminemia, cirrhosis of the liver and hepatitis. The sonographic Murphy's sign cannot be elicited in comatose patients and is rarely reliable in the postoperative period due to surgical wounds and analgesic treatment. Hepatobiliary scintigraphy has a high false positive rate in patients undergoing prolonged parenteral alimentation, prolonged fasting, severe nonbiliary intercurrent illness and hepatocellular dysfunction. These conditions also are found in intensive care patients.

Although ultrasonography and hepatobiliary scintigraphy are equally sensitive, hepatobiliary scintigraphy has an increased false positive result in intensive care patients. We, therefore, favor ultrasonography as the initial diagnostic procedure. Ultrasonography can be performed bedside with minimal risk to the critically ill patient, can detect signs of complications associated with acute cholecystitis and can dif-

ferentiate acute from chronic cholecystitis. It can also determine the presence of gallbladder calculi. When ultrasonography is equivocal, then hepatobiliary scintigraphy is the next diagnostic procedure of choice.¹²

Although computed tomography has very similar diagnostic reliability as ultrasound, there are technical disadvantages since computed tomography is slower and more costly. Although computed tomography is not used as the initial diagnostic procedure, it may be used initially if the patient has a fever and sepsis of unknown source and the physician is seeking occult abscesses throughout the abdomen.

When acute acalculous cholecystitis is diagnosed, a decision must be made regarding therapy. Cholecystectomy is the procedure of choice. In patients too ill or in whom definitive cholecystectomy is technically difficult, ultrasound or CT guided percutaneous cholecystostomy is the treatment of choice to overcome this critical period. No anesthesia other than a local anesthetic is necessary, and rapid pain relief often is achieved.

A positive culture of the aspirate confirms the diagnosis of acute acalculous cholecystitis. Because of its low specificity, however, a negative culture cannot be used to exclude the diagnosis.

Cholangiography via the inserted catheter then may be used to assess patency of the cystic and common bile duct as criteria for removal of the drainage catheter and consideration for further therapy. On the average, the catheter is removed after 10 to 21 days. Results of a limited series have shown that when postdrainage cholangio-

graphy is normal, cholecystectomy at a later stage is not indicated in the majority of patients.¹⁶

In summary, critical care patients who develop clinical signs and symptoms of acalculous cholecystitis or those in whom there is a high index of suspicion should be evaluated initially using ultrasonography. If the sonographic findings are equivocal, then hepatobiliary scintigraphy is performed. With the diagnosis of acalculous cholecystitis, a therapeutic approach is instituted. If cholecystectomy is not technically possible, ultrasound or CT guided percutaneous cholecystostomy then is performed as palliative therapy. A positive culture of the gallbladder aspirate confirms the diagnosis of acalculous cholecystitis. The cholecystostomy tube is left in place and the gallbladder is followed via cholangiogram through the cholecystostomy tube. The cholecystostomy tube is removed when the cholangiogram is normal.

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Look-Alike and Sound-Alike Drug Names

BENJAMIN TEPLITSKY, R. PH.
Brooklyn, N.Y.

Look-alike and sound-alike drug names can be misinterpreted by a nurse reading doctors' orders or by a pharmacist compounding physicians' prescriptions. Such misunderstandings can result in the administration of a drug not intended by the prescriber. Awareness of such look-alike and sound-alike drug names can reduce potential errors.

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Generic Name:

Dosage Forms:

Category:

Brand Name:

Generic Name:

Dosage Forms:

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Visken, Sandoz

Pindolol

Tablets

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Bronchodilator

Proventil, Schering

Ventolin, Glaxo

Albuterol

Aerosol, tablets,
syrup

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Adult Onset of Idiopathic Inflammatory Myopathies—Therapy and Prognosis

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Indianapolis

VARIOUS AGENTS may cause inflammatory damage to the skeletal muscles. In Europe and Western countries, the idiopathic type of inflammatory myopathy (IIM) is the most frequently acquired muscle disorder in adults.

IIM is now considered an immunological mediated disorder.⁴ Over the past several years, our understanding of the pathogenesis of those disorders, diagnosis and therapy have improved. The classification of IIM, given in *Table 1*, is based on clinical presentation, pathological changes in muscle and etiological factors.⁴ This review, however, primarily deals with the therapy and prognosis of these conditions, particularly the primary polymyositis (PM) or dermatomyositis (DM). Before starting therapy, it is crucial to confirm the diagnosis using the criteria presented in *Table 2*.

Patients with definite IIM have four criteria, while three of five criteria and two of five criteria indicate probable IIM and possible IIM, respectively. Some patients presented rather

atypically, such as the muscular dystrophic type of chronic polymyositis. Some patients may present with a malfunction of cardiorespiratory apparatus and/or prominent dysphagia.

Because of the lack of controlled, prospective studies, the natural history of IMM is unknown, but the disease generally is progressive and disabling.¹⁻³ At best, therapy is empirical but morally justified because of a high mortality rate, particularly in acute and more severe cases.

Corticosteroids

Corticosteroids are generally considered drugs of choice for patients with IIM.^{2,3,5,7} Prednisone is commonly used with a starting dose of 60 to 80 mg per day (1 mg per kg of body weight) in divided doses, along with precautionary measures such as antiacids, potassium supplement, calcium and fluoride in the elderly. The initial dose may be continued for at least six to eight weeks before expecting any response. The response to treatment should be based upon clinical improvement in muscle strength and not on the reduction of serum muscle enzymes. After the patient has achieved steady improvement, continue prednisone for an additional one or two months before tapering the dose. Prednisone withdrawal should be done gradually, at a rate of 5 to 10 mg every month until a dose of 30 to 40 mg is reached and then 2.5 mg every three to four weeks until the lowest maintenance dose is achieved, which controls symptoms and reduces enzymes. Reaching a maintenance dose may take six to eight months. Too early withdrawal or too rapid reduction of the dosage may cause a relapse.

TABLE 1
Classification of Idiopathic Inflammatory Myopathies (IIM)

- A. Dermatomyositis
 - 1) Childhood or juvenile
- B. Polymyositis
- C. Dermatomyositis or polymyositis associated with an underlying neoplasm
- D. Dermatomyositis, polymyositis, associated with, or as a part of, connective tissue disease (overlap)
- E. Dermatomyositis or polymyositis associated with other disorders of unknown etiology
- F. Less Common Types
 - 1) Inclusion body myositis
 - 2) Eosinophilic polymyositis
 - 3) Localized nodular myositis
 - 4) Proliferative myositis

During the introductory phase of prednisone, when improvement occurs, some doctors advocate changing to alternate-day therapy so the incidence of side effects will be reduced. However, the common practice would be to resume alternate-day corticosteroids for those patients with mild symptoms, elderly individuals or if serious side effects develop. One may choose to start with a combination of corticosteroids and immunosuppressive therapy for selected patients in whom corticosteroid side effects are considered predictable and serious. The most reliable indicator of response to therapy is muscle strength measurement followed by serum creatine kinase (CK). Although EMG and muscle biopsy findings usually will nor-

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malize during the course of treatment, their value in judging the response to treatment is limited. The serum muscle enzymes normalize and the muscle strength improves, usually in two to three months. Despite absence of controlled data, the rationale behind using corticosteroids is to increase muscle strength in acute stages and to improve the long-term prognosis.

Patients should be considered "steroid resistant" if they are maintained on an equivalent of 40 mg prednisone per day for three to four months but fail to gain strength in muscle function with and/or without changes in the level of serum muscle enzymes. If the patient fails to respond to prednisone, try one of the following treatments.

Immunosuppressive Drugs

Immunosuppressive drugs are indicated in patients who are steroid resistant, have developed serious undesirable side effects and in whom the response to corticosteroids is expected to be less optimal. Most authors advocate the use of azathioprine, methotrexate (MTX), or cyclophosphamide.^{2,7,8} According to published reports, MTX is the most effective. It is given intravenously and orally on a weekly or bi-weekly basis.

Simultaneous use of these agents with corticosteroids is justified when prolonged use of prednisone might harm patients with diabetes, hypertension, severe atherosclerosis, metabolic bone diseases or compromised cardiorespiratory status. Immunosuppressive agents generally are not recommended as the sole medicine for treatment of PM or DM. Patients treated with prednisone and azathioprine improve more in respect to functional disability and require less prednisone for disease control. Adding immunosuppressive drug therapy may significantly reduce morbidity and possibly mortality. Recently cyclosporin has been reported beneficial in some cases.⁹

Pulse Therapy

Pulse therapy consisting of high dose

TABLE 2
Diagnostic Criteria

- 1) Weakness: Symmetrical predominantly proximal with neck flexors, with/without dysphagia or respiratory failure.
- 2) Dermatologic factors: Heliotropic discoloration of eyelids, periorbital edema, erythematous, scaly dermatitis of the face, neck, upper trunk, dorsum of the hand, extensors surface of the extremities in cases of dermatomyositis.
- 3) Serum enzymes: Elevated serum creatine kinase (CK) aldolase or myoglobin; alone or a combination.
- 4) Electromyographic (EMG) features: These include alteration in the skeletal muscles by introduction of needle into the muscle, which may reveal the presence of spontaneous potentials of fibrillations; positive sharp wave and bizarre high frequency discharges; particularly in proximal and paraspinal muscles. Voluntary motor unit potentials (MUPS) are usually small in amplitude, short in duration and polyphasic and recruited fully by minimal contraction (myopathic charges).
- 5) Muscle biopsy: Evidence of muscle fiber necrosis and inflammatory response in the connective tissue and/or perimysial space.

methyl prednisone (1 gram daily for three days intravenously) has been practiced in some immunological diseases with signs of acute relapse.

Plasmapheresis

Plasmapheresis is presently used in a few experienced centers for patients who either do not respond to conventional prednisone and immunosuppressive therapy or who have a rather progressive course.¹⁰

Total Body Irradiation

Of a few cases of PM or DM treated with total body radiation (low dose), some show a dramatic response and remission, most temporarily;¹¹ however, this procedure is yet to be proven and may be considered as a last resort for patients who do not respond to conventional therapy or who have life-threatening illness.

Thymectomy

Some authors report improvement of refractory IIM following thymectomy, but studies are too small and the long-term effect is uncertain. The cur-

rent therapeutic modes have been summarized in Table 3.

Prognosis

Although PM and DM may undergo spontaneous remission, they are considered progressive diseases that may lead to severe disability and death, if not adequately treated. Because of the severity of the illness and a good response to medical therapy, double blind clinical trials are difficult to design. Therefore, the natural course of these diseases remains unknown. The mortality ranges from 14% to 40% according to different series.^{5,13,14,15} The difference arises because of selection of patients, stages of the disease, medical history, mode of therapy and duration of follow-up. Only one uncontrolled study reviewed follow-up results of untreated and treated patients for six weeks, which showed no significant difference in remission rate between these groups; however, treated patients had less mortality and disability.

This study emphasizes the occurrence of spontaneous remission in cer-

tain patients. Corticosteroids and immunosuppressive drugs are generally believed to improve functional recovery of these patients over a long-term follow-up.

As reported by DeVore and Bradley, and Benbessat *et al*, several factors may affect the prognosis in the long term and the mortality in acute stages.

In these series, mortality was directly related to PM and DM in patients who had underlying malignancy or developed cardiopulmonary dysfunction or sepsis. Long-term outcome of patients with IIM may be affected if they have been diagnosed late, misdiagnosed or treated partially with corticosteroids for a short term or if elderly patients have associated diseases, such as malignancy or collagen vascular disease. The severity of skin rashes, degree of inflammation in muscle biopsy, level of serum muscle enzymes and EMG changes generally have no significant correlation with the prognosis.

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TABLE 3

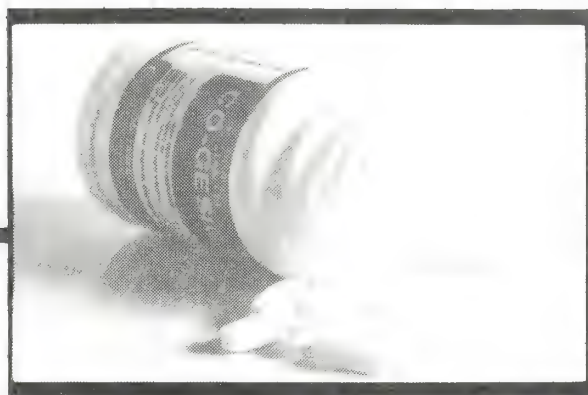
Summary of Therapeutic Approach

- 1) Establish diagnosis, exclude associated disease and treat.
- 2) Begin high daily dose of prednisone with sustained improvement achieved. May change to alternate-day dose at this point or taper the dose slowly until minimal effective dose is determined, then continue for an indefinite period.
- 3) If no improvement occurs after four months of high daily or alternate therapy, steroid resistance has occurred.
- 4) In the case of steroid resistance, consider adding immunosuppressive drugs, such as oral or intravenous methotrexate and/or azathioprine (depending on the patient's condition) and continue until a sustained response has occurred, then taper the prednisone to the minimal amount and begin to taper the immunosuppressive agent. In case of MTX, this agent should be continued until optimal response is achieved; then it should be discontinued. Another alternative would be plasma exchange if the patient is not responding to conventional drug treatment. Before considering exchange, combination of immunosuppressive drugs is justified in selective cases.

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The Nature and Evaluation of Cancer Pain

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VARIOUS INVESTIGATORS have reported pain in up to 87% of patients with recurrent, advanced and terminal cancer.¹⁻¹¹ In 1987, Donovan and Dillon reported that of 96 randomly selected hospitalized cancer patients, more than half suffered from pain that was horrible or excruciating.¹² Also in 1987, Greenwald *et al* reported on pain in almost all registered cancer cases in a 13 county area. Using the criteria of pain every day of moderate to very bad severity, they found 28.3% of patients fit this criteria.¹³ In all of the above reports, it is important to note that the patients were under medical care.

On the other hand, it has been estimated that cancer pain can be virtually abolished in 80% to 90% of patients by using pharmacological, anesthesiological, surgical, physical and psychological techniques.¹⁴⁻¹⁷

Cancer is perceived as a highly painful disease. The public greatly fears cancer pain, in some cases, to the extent that they might be reluctant to seek medical attention.¹⁸ Too often the physician is more interested in treating the cancer than the pain, whereas for many patients treating the pain is the priority.

The Nature of Pain

For the purpose of this discussion, pain will be defined as proposed by the International Association for the Study

of Pain: "an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage."¹⁹ From this definition we can see the evaluation of pain will be difficult because it is a subjective experience. No person can ever truly know the exact experience of another person's pain. On the other hand, the lack of an objective index makes the pain no less real.

The definition also notes that pain is more than a sensation. It is also an emotion. Anger and anxiety are associated with acute pain. When pain becomes chronic, depression is usually associated with it. Even though pain is defined as being associated with actual or potential tissue damage, this does not imply that all suffering that a person experiences can be simply correlated with tissue damage. In some cases, massive tissue damage may be associated with little pain, and a great deal of pain may be experienced when there is little evidence of tissue damage. Many physicians have had the experience of seeing patients in emergency rooms with massive trauma who are not in shock and yet did not complain of pain. Other patients in whom little or no pathophysiological process could be found were still experiencing extreme pain.

Patient suffering is derived from a number of sources. The first source is the nociceptive activities of the nervous system. Pain is generally initiated when there is stimulation of the alpha delta and C fibers in the periphery. These impulses are then transmitted rostrad until they are received and processed by the cerebral cortex; however, during the passage from the initiating stimuli to the cerebral cortex, the nociceptive impulses are modulated at every level of nervous system in-

Editor's note: This is the first in a monthly series of six articles about cancer pain.

tegration.²⁰ This modulation causes the extreme variability among people suffering from similar amounts of tissue damage.

Pain is the subjective experience of a person that represents an integration of the nociceptive impulses as they interact with the limbic areas of the brain to produce a sensory-emotional response. Modifications of the emotional responsiveness of the person experiencing the pain by pharmacological or other means will attenuate or exacerbate this experience.

The "total pain" or suffering of the person is not only the experience of the sensory and emotional qualities of the pain but also includes the meaning of the pain to the life of the person experiencing it.²¹ Pain of unknown origin with no expectation of future termination will yield more suffering than a well-defined pain situation. Also, all other sources of suffering will be melded into the total pain experience.

Acute pain is characterized by well-defined temporal parameters. It is generally associated with subjective symptoms and physical signs of hyperactivity of the autonomic nervous system. It often is well-localized and precisely describable in character.

On the other hand, chronic pain is less distinct. The nervous system adapts with increasing chronicity. Evidence of this nervous system adaptation is demonstrated by the increasing centrality of pain over time. For example, a cordotomy can be performed, which will give immediate relief from pain. Often, however, the pain will

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recur after a period of a few months. The initiating stimulus for the pain has become more central.

Chronic pain also leads to marked changes in a person's personality, functional capacity and general lifestyle. Perhaps the best way to understand this idea is to think of what changes would take place in your life if you had a constant, severe migraine headache every day with no hope of cure. The entire life of a person experiencing chronic pain is changed.²²

Pain Evaluation: General Principles

The goal of pain evaluation is to determine with the patient the functional quality of life that the patient wishes. The governing principle must be the desires of the patient. It also must be an educational experience for the patient to explore with the physician the various options and possibilities of pain control. It is important to remember you do not treat pain in a person but rather a person who is in pain. Patients must be assured that their physicians believe them and take the pain seriously. Patients also must be reassured that their physicians will do everything possible to ensure that their desires are met. To obtain this type of discussion, mutual trust between the physician and the patient is necessary. One cannot rush a pain evaluation or obtain a satisfactory outcome without establishing rapport.

Specifics of Pain Evaluation

The pain evaluation starts with a detailed and accurate history of the pain. A major function of the evaluation is to determine the cause of pain as well as to consider various ameliorative measures. The location and time of onset or exacerbation of the pain is of vital importance as this can be one of the first clues as to the cause of pain. For example, a pain that begins within one year post radiation in excess of 6,000 R in the area of the radiation port suggests a radiation fibrosis. Again, the occurrence of right upper quadrant body wall pain in a

person with a primary cancer of the breast suggests metastasis to the liver.

The patient should give a description of the nature of the sensory experience associated with the pain. For example, a pain that is described as burning, lancing and sharp would be indicative of a neuropathy, whereas a localized pain described as aching, heavy and cramping might be evidence of pain due to hypertonicity of skeletal muscles. Pain of visceral origin is diffuse, aching and often referred to cutaneous sites.

One must determine the factors that ameliorate or worsen the pain. For example, if the patient consistently has a reduction in pain with a hot shower, hot tub or heating pad, one may assume that at least one component of the pain is due to hypertonicity of the skeletal musculature. In such a case, the patient will benefit by learning deep, muscular relaxation techniques and a mild physical exercise program in which stretching of the muscles is emphasized.

One must determine the psychological and social factors that compound the complaint. In approximately 25% of the patients, an affective disorder will be present to a degree that it will interfere with attempts at pain management unless it is treated.²³ The diagnoses that are most usual in these cases would be major depressive episode, adjustment disorder with depressed mood and general anxiety disorder. Another important component of the psychological and social factors that affect pain will be the meaning of the pain to the person. When any of us have pain, we attribute the pain to some cause. For example, if the patient attributes the pain to advancing cancer that will lead to an untimely death, the patient will suffer a great deal more than if the pain is attributed to a more benign cause.

The pain plays a role in the life of the patient. For example, many patients will use their pain to control the social environment in which they live. This reaction is particularly common

in cases when patients are growing more and more helpless and have previously led lives in which they were in control most of the time. The fact that patients use pain to control the people around them makes the pain no less real. Such patients, however, may not wish you to completely take away their pain. The same might be true if a person believes that suffering will aid in salvation after death. If a person's self-esteem predominantly has come from work and the pain interferes with work, then reducing the pain will prevent depression.

The physician must perform a careful medical and neurological examination. The onset or exacerbation of pain may mean a change in the disease state. For example, the onset of pain at the site of a thoracotomy scar three or four months after the operation, in many cases, will indicate a recurrence of the tumor.²⁴ Again, metastatic cancer tends to be more painful than a nonmetastized tumor. An occurrence or exacerbation of pain could indicate a metastatic process is underway. One also must consider the possibility that the patient has pain that is unrelated to cancer. This is of particular importance if the patient thinks all the pain means the cancer is becoming worse. Yet for approximately 10% of all people with cancer who report pain, the pain will not be associated with the malignancy.²⁴

The physician must review and/or order appropriate diagnostic procedures. The physician also must know the limitations of those procedures.

Therapy to manage the pain should begin even though the assessment procedure is incomplete. This will reassure the patient that the physician is taking the pain seriously and ensures the cooperation of the patient.

After therapy has been initiated, pain must be reassessed on a regular basis. The pain will change in relation to the disease state, the activity and the lifestyle of the patient. Also, tolerance may develop to the various pain therapies. One way to obtain a

reliable pain report is to have the patient maintain a pain diary.²⁵ In the diary the patient can record the level of pain on a scale of 0 to 10, 0 being no pain and 10 being the worst pain imaginable. The pain can be recorded at different times of the day and after different types of activities. Such record keeping allows the patient to discover the activities that exacerbate or ameliorate his pain. Keeping a diary also often gives the patient a sense of control over the pain, which greatly reduces the anger and anxiety associated with it. It also can help the patient predict when to use "rescue" medications or other pain therapies. Any major changes in pain should be a signal to consult a physician.

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ISMA Sponsors Leadership Conference

THE INDIANA STATE Medical Association will host its second annual Leadership Conference March 11 and 12 at the Holiday Inn, Union Station, in Indianapolis. The two-day conference will consist of a general session Saturday, March 11, from 10 to 11:45 a.m., followed by several three-hour seminars. On Sunday, March 12, the seminars will begin at 9 a.m.

This year's theme is "Personal Development of the Medical Community Leadership." ISMA officers, trustees and alternates, county society presidents and secretaries, state specialty society leadership, ISMA delegates and commission and committee chairmen are encouraged to attend.

James S. Todd, M.D., senior deputy executive vice-president of the American Medical Association, will be the luncheon speaker March 11. Dr. Todd will speak on the latest information on the Harvard Resource-Based Relative Value Scale (RBRVS). He is a general surgeon from Ridgewood, N.J., who joined the AMA staff as senior deputy executive vice-president in 1985. He is a cum laude graduate of Harvard Medical School.

The schedule also includes the following programs:

Michael Heaton, CPA, will present "Managing Medicare Reimbursement," a program addressing general MAAC guidelines with practical tips on how to streamline the reimbursement process. Heaton also will give an update on the most recent Medicare developments.

Stanley DeKemper of Fairbanks Hospital and Kete Cockrell, M.D., the



James S. Todd, M.D.

medical director of the ISMA Commission on Physician Assistance, will present "Intervention Training," a program showing physicians how to recognize the symptoms of drug and alcohol abuse. The program also will provide suggestions on how to effectively intervene with impaired physicians.

Liabilities Limited's Director of Loss Control Linda Mangels, Ph.D., and Vice President of Claims Margie Creighton will present "Risk Management." This program will teach physicians how to reduce their exposure to claims. Three hours of CME credit will be awarded to each participant.

"Medicine, Media and Microphones" is a three-hour workshop designed to teach physicians how to be effective spokespersons, particularly in inter-

views with the broadcast or print media. The course will be taught by Adele Lash, ISMA public relations director. How to prepare for an interview, communication objectives and do's and don'ts will be covered, with opportunities for audience participation. Each participant will be interviewed on camera during the second half of the workshop. The program is limited to 15 people and recommended for current county, district or state medical society officers or those who aspire to leadership roles.

Julie Newland, ISMA director of government relations, will focus on the 1989 session of the General Assembly as she updates the status of pending health/medical legislation. Newland also will present "Grass Roots Lobbying," a classroom-style program addressing political fundraising, tracking ISMA legislation and letter writing. In a role-playing session, ISMA lobbyists will assume the part of legislators.

A program titled "Infectious Waste Management" will update physicians on pending legislation that will affect the management and disposal of infectious waste.

"Issues of the '90s" is the title of the Hospital Medical Staff Section program. Topics will include hospital medical directors in the 1990s, medical staff bylaws and peer review organizations in the hospital medical staff.

The registration fee is \$100 in advance and \$125 at the door. The deadline for registration is Feb. 23. For additional information or to register, call Denise Le Doux, ISMA Leadership Conference coordinator, at 1-800-382-1712 or (317) 925-7545.

Your ISMA Auxiliary is responding to the AMA's White Paper Report
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Confidentiality—A Physician's Tool For Effective Medical Treatment

P.A. MACRI, M.D.
Mishawaka

THE PROLIFERATING demand by people outside the physician-patient dyad to obtain information about patients has forced physicians into a position that invades patient confidentiality. Insurance companies demand that physicians provide information about the patient that may prevent one from being insured.

Employers demand that physicians provide information about the patient that may jeopardize one's job. Schools demand that physicians provide information about a student's absenteeism that may result in school expulsion. Lawyers demand photocopies of patients' records that may contain sensitive living habits and result in job discrimination.

Also, Medicare administrators demand detailed summaries of the patient's hospital stay that are used in administrative decisions and may prevent one from being reimbursed. The state demands that physicians provide information on birth certificates about a mother's drug and alcohol habits that can affect her running for public office.

In this scenario, the physician unknowingly causes many possible un-

toward consequences for the patient. With repeated experiences, patients learn to withhold information from physicians because of mistrust of the sanctity of the patient-physician confidentiality ethic and thereby lose the therapeutic benefit of the patient-physician relationship.

The purpose of this article is to show how confidentiality promotes healing and how third parties infringe on confidentiality and to recommend alternatives for creative action.

Hippocrates defined confidentiality as "Whatsoever I shall see or hear concerning the life of men, in my attendance on the sick or even a part thereof, which ought not to be noised about, I will keep silent thereon, counting such things to be holy secrets." More simply, his definition means "what you tell me I won't tell others." The need for this privacy has been recognized since Hippocrates and has been protected by law.

Most states have statutes that provide privileged communication between patient and physician to prevent physicians from being witnesses in court about matters communicated by patients in the course of professional business.¹

However, more and more exceptions have been added to the statutes and according to Plautt,² total confidentiality does not exist under U.S. law. The loss of confidentiality and trust seriously undermines the physician's effective medical treatment in two ways: 1) The physician must make conclusions about

the patient on incomplete information, and 2) The physician loses the cathartic healing effect of the patient "telling his story" to the physician.

Confidentiality is the implied foundation for gathering complete information about a person. This process begins with the physician communicating an attitude of concerned interest in all areas of the patient's life, which in itself gives the patient permission to be completely open and truthful. Hopeful that the physician can assist, the patient reveals personal information in a private context, expecting that it will not be revealed to others. Complete and detailed patient information remains essential for a diagnosis and treatment plan.^{3,4}

Balint and Stephens emphasize the importance of a complete patient biography so the clinician can "manage a sick person with the purpose of alleviating most effectively the total impact of illness upon that person."⁴ This statement means the patient may reveal information about his personal habits, work environment, family life, economic status and emotional state. The clinical importance of this idea can be exemplified in the diagnosis of musculotension headaches, which can and should be made by history alone.

The management of the etiologic factors may address such questions as: 1) Are there unresolved conflicts with the patient's spouse, children, employer or schoolmates? 2) Is there evidence of depression? 3) Is there evidence of other serious psychiatric problems? 4)

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Are the physical demands of the work place more than the patient can endure? 5) Is there a pattern not suggesting serious organic disease? 6) Are there environmental toxic factors and 7) Are there serious financial problems?

Without this vital input from the patient, treatment is merely symptom-directed, such as medication for pain, muscle relaxants for spasms or tranquilizers for stress. Without the patient's confidence that the information will not be shared with a spouse, an employer, an insurance company or a school, the patient will be reluctant to fully reveal concerns, conflicts and worries. Without a complete and meaningful history, the physician tries to rely on expensive and often useless or misleading blood tests, x-rays, technical procedures or consultations.

Beyond facilitating the free flow of information between patient and physician, the sanctity of confidentiality is also crucial for promoting the healing effect, which results when patients freely discuss their problems. Wehlage has written, "the process or act of telling the story becomes therapeutic."⁵ Huston, Balint and Stephens speak of "the doctor as a therapeutic agent."^{3,4} Although it is difficult to define this process, physicians and patients have an intuitive sense of its medicinal effect. The patient's revelations and the physician's listening ability become the foundation of all medical treatment. The essence of therapeutic listening is poignantly expressed in the following poem:

Listening As Healing

When I ask you to listen to me
and you start giving advice,
you have not done what I ask.

When I ask you to listen to me
and you begin to tell me why I
shouldn't feel that way,
you are telling me to deny my
feelings.

When I ask you to listen to me
and you feel you have to do

something to solve my problems,
you have failed me, strange as that
may seem.

Listen—all I ask is that you listen—
not talk or do—just hear me.
You're trying to cure me not hear
me.

But when you accept as a simple fact
that I do feel what I feel,
no matter how irrational that may
seem to you, then I quit trying
to convince you and get about
the business of understanding what's
behind this irrational feeling.

And when that's clear, the answers
are obvious, and you know what?
.... Your listening made that
possible.

Perhaps that's why prayer works,
sometimes, for some people
because God is still and he doesn't
give advice or try to fix things. He
just listens and lets you work it out
for yourself, staying your "Silent
Partner."

So, please listen and just hear me . . .
and we can both keep in mind that
there are important times in our
lives when we just need to be heard,
not cured.—Anonymous

Confidentiality can have a beneficial effect on the outcome of all treatment modalities by strengthening the physician-patient bond. For thousands of years, physicians have helped patients in spite of prescribing medications that were physiologically ineffective and often dangerous. Today, we understand that psychological factors influenced these beneficial effects, a phenomenon called the placebo effect.

A placebo, as defined by Shapiro,⁶ is a substance or procedure that is without specific activity for the condition being treated. The placebo effect, which may be positive or negative, is the psychophysiologic response to the placebo. The placebo effect consists of multiple interacting variables in the physician-patient relationship, culture and treatment setting. Although the

degree of the effect has not been well defined, virtually all current psychotherapy theorists and researchers acknowledge the direct or indirect influence on the outcome of treatment that includes the use of medication.⁷

One study found that the physician's behavior, such as the use of the patient's name, body position, facial expression and vocal animation, differentiated between high and low dropout rates in the study.⁸ Therefore, anything that destroys confidentiality, privacy and trust destroys a basic ingredient in the patient-physician relationship and handicaps the physician's effectiveness.

Third parties, such as insurance companies, infringe on the patient's and the physician's rights to private communication by asking the patient to sign an information disclosure good for 30 months and by asking the physician to act as an agent of the insurance company by providing such information. A typical release of information request begins with "I authorize ____ insurance company, its agents, employees, reinsurers, insurance support organizations and their representatives to obtain information about me to evaluate this application. This information may be about age, medical history, condition and care, physical and mental health, occupation, income advocations, driving record, other personal characteristics, other insurances and the use of alcohol, tobacco and drugs. . ."

This procedure has serious flaws. First, the patient has no way of knowing the extent of information released by the physician if the patient has not seen the report. Second, the patient may not fully understand the implications of releasing all the information to the people and agencies that can read it, nor can he predict the long-term consequences of such disclosures. Third, information used to pay claims in one instance may be disqualifying for employment or future insurance in another. Fourth, the law demands that patients be specifically and precisely

informed about medical matters so they will make informed judgments.

After all, surgical permits must be specific and well explained. Side effects from medications must be precisely outlined. Patients can or should be able to expect precise insurance authorization statements. This problem was addressed in 1977 by the Privacy Protection Study Commission⁹ that stated, "many authorization forms now in use are so broad as to constitute an invitation to abuse. Many do not indicate that they will be used by investigative reporting agency representatives to develop inspection reports or acquire medical record information to be transmitted to the insurer. Many do not indicate that they will be used to get credit reports, or information from banks and other organizations."

Third parties have understandable needs for the information they pressure physicians to provide. Physicians often unwittingly have been made agents to many third parties who find medical information administratively useful. They cooperate and forget their primary role, which is to serve the patient. Hippocrates once said to one of his students, "Let your best means of treating people be your love for them, your interest in their affairs, your knowledge of their condition and your recognized attentiveness to them."¹⁰

Allen Stone observed that modern physicians still act on the maxim "do what you think will benefit the patient."¹¹ This attempt by physicians to satisfy two parties results in destructive antagonistic behavior to one or both parties. Organizational research suggests that whenever three parties are involved in an issue, collusion results when any two of the three parties become antagonistic toward the one.

Hagg exemplified this phenomenon in describing 48 cases of "split-field, relay triangle"¹² as the cause of anxiety in pathologic behavior. In this phenomenon, there are three two-party antagonistic relationships. The danger

TABLE 1

Patients asked to sign authorization statements for release of information should expect the following:

That no insurance institution or affiliated organization ask or require a patient to sign any statement authorizing the institution to disclose any information about the patient unless the statement is:

- 1) in plain language;
- 2) dated;
- 3) specific as to the individual (doctor) and institution (hospital) the patient is authorizing to disclose information;
- 4) specific as to the nature of the information the patient is disclosing;
- 5) specific as to the individual (insurance agent) or institution (insurance company) to whom the patient is giving information;
- 6) specific as to the purpose for which the information may be used in the present and the future; and
- 7) specific as to the expiration date of the authorization. This date usually should not exceed one year except for life insurance or noncancelable or guaranteed renewable health insurance that extends for two years.

TABLE 2

Physicians are asked to accept authorization statements for release of medical information about their patients. They should not accept as valid any authorization that is not:

- 1) in writing;
- 2) signed by the individual or the individual's representative on the date specified;
- 3) clear that it is the physician being authorized to disclose information;
- 4) specific as to the nature of the information requested;
- 5) specific as to the institution or individual to whom the information is being given;
- 6) specific as to the purpose for which the information may be used in the present and future; and
- 7) specific as to the expiration date of the authorization. This usually should not exceed one year except for life insurance or noncancelable or guaranteed renewable health insurance that extends for two years.

of the pathologic triangular collusion phenomenon is the destruction of the patient-physician relationship with the development of mistrust, frustration and anger between physicians and patients.

Once the trusting relationship is jeopardized, the patient will hesitate to reveal emotional, psychological or social information. Physicians will receive incomplete histories and patients will lose the therapeutic aspects of effective interchange. Most physicians have experienced the destructiveness of patient distrust, antagon-

ism, anger and fear, especially in military facilities, colleges and occupational services.

Once physicians re-emphasize the value of these principles and pressure third parties to become more sensitive to them, the following practical measures should be implemented:

1) The management of the split-field, relay triangle system is extremely difficult; therefore, recognition and avoidance of such collusions are the best means of avoiding the destructive consequences of this phenomenon. Physicians must be reluctant and

cautious in providing information to any agent not directly involved in the continuing care of the patient. Information about the patient's personal habits, emotional problems and social life must be especially guarded and then released only with the patient's full understanding and permission.

2) Physicians should follow the recommendations of the Privacy Protection Study Commission for the patient (Table 1) and the physician (Table 2) with regard to authorization of medical information disclosure.

3) One should encourage patients to try to give information to the insurance companies without the involvement of their physician. If a physician's signature is necessary, encourage the patient to write one's own responses to the third parties. If there are no deceptions, the physician may type and sign it, keep a copy and submit another copy to the patient.

4) The physician should ask third parties to submit specific questions about what information is desired. Patients then can be allowed to answer the list the best they can before submitting it to the physician for final review and approval.

5) Responses must always be in

writing and sent to the patient, especially if the patient has had no input in the formulation of the information requested.

6) If third parties are dissatisfied with the information they have received from the patient, they can confront the patient, explain the consequences, gather their own data, or hire their own agents to do so. If the patient withholds information or gives false information and commits fraud, the problems exist between the patient and the third party.

Confidentiality is a basic ingredient of an effective physician-patient relationship and effective patient care. The physician's right to maintain the effectiveness of a trusting, confidential relationship with the patient outweighs third party demands for patient information. Physicians must constantly strive to avoid the triangular collusion between patients, themselves and third parties.

Sensitivity about the importance of this confidential relationship cannot be dulled by the long-term subtle erosion that is occurring. The right to maintain a confidential patient relationship and to use this as a therapeutic tool cannot be dismissed by third parties or

signed away by the patient.

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ISMA Seeks Expanded Prenatal Care Funding

CITING THE "dollars and infant lives saved," Fred Dahling, M.D., president of the Indiana State Medical Association, called for support of a legislative proposal to expand funding for prenatal care programs in Indiana.

"More infants die each year in Indiana than do infants in 37 other states, yet Indiana ranks 47th out of 50 states in Medicaid funding for prenatal and infant care," said Dr. Dahling. He also said, "The medical community in this state has witnessed an urgent need for the state to ensure that more pregnant women and their children are eligible for expanded Medicaid coverage as provided by the federal government under the SOBRA option."

SOBRA (Sixth Omnibus Budget Reconciliation Act) allows states to expand their Medicaid programs for pregnant women and their infants in families whose incomes are at or below 185% of the federal poverty level. The federal government would provide the funding for nearly two-thirds of the expanded program and the state would pick up one-third of the share.

In 1988, the Indiana legislature opted into the SOBRA program at 50% of the federal poverty level (\$4,650 annual income for a family of three).

"While we certainly appreciate the current SOBRA expansion in Indiana,

the ISMA hopes the legislature will see the fiscal wisdom in expanding Indiana's SOBRA program to 150% of the federal poverty level (or more) and to include medical care for children up to age eight," Dr. Dahling said.

"Given Indiana's high infant mortality rate, this issue clearly is a priority item on the health legislative agenda. (Indianapolis had the worst minority infant mortality rate of any major city in 1984 and ranked seventh worst for nonwhite infant mortality).

Dr. Dahling called for a concerted effort by the medical community, policymakers and others concerned about this issue to reduce infant mortality. "We must remove the financial barriers to prenatal care under the Medicaid program. In doing so, pregnant women can receive proper and timely prenatal care to lessen the likelihood of a low birthweight or at-risk infant."

Indiana's infant mortality rate is 11.2 per 1,000 live births. The U.S. Surgeon General's 1990 objective for health care was to reduce infant mortality to nine deaths per 1,000 live births. Indiana is not expected to meet that objective.

A report issued by the Institute of Medicine showed every dollar spent on prenatal care saved \$3.38 in medical care for low birthweight or at-risk babies. In addition, a study completed

by Blue Cross/Blue Shield showed a low birthweight baby costs the Medicaid program on the average of \$15,000 during its first year of life.

In its report, issued last August, the National Commission to Prevent Infant Mortality said prenatal care can reduce the incidence of low birthweight babies.

The report indicated that prenatal care was more cost effective than the high technology care needed following birth to save low birthweight babies. Lifetime care costs for low birthweight babies can reach \$400,000, the national commission report said.

Last Dec. 20, physician representatives met with the editorial boards of the *Indianapolis Star*, *Indianapolis News*, *Fort Wayne Journal Gazette* and *Fort Wayne Sentinel* to discuss the SOBRA legislative initiative. The physician representatives included Fred Dahling, M.D.; Virginia Wagner, M.D., representing the Indiana Chapter of American Academy of Pediatricians; and Phil Eskew Jr., M.D., and William Graham, M.D., representing the Indiana Section of the American College of Obstetricians and Gynecologists. ISMA Director of Public Relations Adele Lash attended the meetings at the Indianapolis newspapers.

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Recent Court Rulings

Hospital Followed Proper Procedures in Termination

A hospital did not violate its bylaws in terminating a physician's staff privileges, an Illinois appellate court ruled.

The physician, a chest surgeon, joined the hospital's courtesy staff in 1959. In 1969, he became a member of the hospital's provisional staff under a change in its bylaws. He retained the privileges he had as a member of the courtesy staff. He could admit patients to the hospital, but he was not required to attend staff meetings and could not vote on hospital affairs. In October 1975, the credentials committee recommended reappointment but voted to monitor his records on an ongoing basis.

On May 27, 1976, the chairman of the credentials committee met with the physician. He criticized him for failing to see his patients and write progress notes with adequate frequency. The physician drafted a memo summarizing the meeting and sent a copy to the chairman. In the memo he wrote that complying with artificial guidelines concerning the number of times he sees his patients and the number of times that he writes hospital record progress notes was not consistent with his principles of practice and that the problem would certainly continue. It would only be resolved by a decision of the medical staff or board of directors, he wrote.

The credentials committee voted unanimously to recommend that the board not reappoint the physician. He then appeared at a staff meeting and discussed his desire to retain privi-

leges. The staff voted to recommend that he not be reappointed. The physician then requested a meeting before the judicial review committee and a written statement of the charges.

The committee stated the most important charge was that he did not meet accepted standards of medical care with regard to frequency of patient visits. There was no evidence that any patient had been harmed by his failure to write more frequent progress notes or that any patient's stay had been unnecessarily prolonged by his procedures. The judicial review committee recommended that the hospital reappoint him.

The medical staff then met and voted to sustain its original recommendation to deny staff privileges. The board voted not to reappoint the physician to the staff.

The physician then sued the hospital for wrongful termination of his staff privileges. He alleged that the hospital failed to follow its bylaws in the termination proceedings, the proceedings were fundamentally unfair, and the decision to terminate his privileges was arbitrary and capricious. The trial court directed a verdict for the hospital on the claim that the hospital failed to follow its bylaws; the court dismissed the claim that the proceedings were fundamentally unfair; and the court entered judgment on the jury's verdict in favor of the hospital on the claim that the decision to terminate his privileges was arbitrary and capricious.

On appeal, the physician claimed the hospital had treated him unfairly because it did not afford him the right to be heard at each step of the termination process, the hospital did not provide him with a written list of charges before the first meeting at which he spoke to the medical staff, and he was not allowed to appeal from the medical

staff's final recommendation or the hospital board's decision.

The appellate court disagreed with the physician and affirmed the trial court's decision for the hospital. The appellate court found that the hospital had followed proper procedure in sending the judicial review committee's recommendation back to the medical staff for further consideration. The other procedures followed by the hospital did not violate principles of fair play. The physician received formal written charges before the committee's fact-finding hearing, and he had adequate time to prepare and present his defense, the court said.

The hospital is a private institution and the medical staff is a voluntary association. While courts will not sanction expulsions from voluntary associations that are contrary to rudimentary due process, voluntary associations do not need to accord their members all of the due process protections found in the U.S. Constitution, the court said. Therefore, the lack of a formal, written charge before the physician's meeting with the medical staff, when the physician was aware of the charges against him, does not amount to deprivation of fundamental rights, the court said.

The hospital did not act capriciously when it rejected the committee's recommendation that his privileges not be terminated. The committee found that he had delayed in dictating discharge summaries and had failed to make notations in several instances regarding patient contact while patients were hospitalized.

Further, the appellate court rejected the physician's arguments that testimony by two expert witnesses should not have been permitted and testimony by a third witness should not have been stricken.—*Head v. Lutheran General Hospital*, 516 N.E.2d 921 (Ill. App. Ct., Nov. 25, 1987)

Reprinted from recent issues of *The Citation*, a medicolegal digest for physicians prepared by the Office of the General Counsel of the American Medical Association.

HMO Held Liable in Malpractice Action

A trial court should not have granted summary judgment in favor of an HMO in a malpractice action against it, an Indiana appellate court ruled.

A patient brought an action against the HMO for negligent failure to diagnose. A trial court granted summary judgment on the grounds that a corporation cannot be vicariously liable for the malpractice of a physician in its employment. The HMO argued that the physicians it employed were independent in their practice of medicine and the HMO did not control their judgment in diagnosis or treatment decisions.

Reversing that decision, the appellate court said the treating physician was an employee of the HMO and his professional activities were supervised by the medical director of the HMO. The circumstances established an employment relationship where the physician performed acts within the scope of his employment. The court said the practice of medicine by the HMO was exactly the same as the practice of medicine by a professional corporation. The fact that the HMO was not organized under the Professional Corporation Act did not permit it to escape liability for the acts of one of its employees.—*Sloan v. Metropolitan Health Council of Indianapolis, Inc.*, 516 N.E.2d 1104 (Ind. Ct. of App., Dec. 23, 1987)

Restrictive Covenant Enforced by Court

A trial court properly granted summary judgment in favor of a medical corporation on its claim that a former employee had violated a restrictive covenant, an Indiana appellate court has ruled.

The former employee was a physician specializing in cardiovascular and thoracic surgery. His contract contained a noncompetition agreement prohibiting him from competing in the practice of thoracic and cardiovascular surgery for a period of two years from the date of termination of the agreement within a 30-mile radius of the office.

On September 1, 1983, the physician was notified that his employment was being terminated. In January 1984, he set up practice in cardiovascular and thoracic surgery within 30 miles. The medical corporation filed suit seeking an injunction or the \$50,000 in liquidated damages that was provided in his contract. A trial court found in favor of the medical corporation, and the physician appealed.

Affirming the decision, the court said that the 30-mile restriction was not unreasonable, since there was a substantial patient base within that area. The court said that the \$50,000 liquidated damages provision was not an unenforceable penalty, since during his four years of employment with the corporation, the physician produced more than \$720,000 in surgical fees. The covenant not to compete was enforceable, even though the corporation did not establish a valid reason for discharging the physician. There was no evidence that the corporation engaged in bad faith, and the physician voluntarily entered into the contract.—*Gomez v. Chua Medical Corporation*, 510 N.E.2d 191 (Ind.Ct. of App., July 14, 1987)—

Man Guilty of Murder in 2-Year-Old's Death

A man who beat his girlfriend's 2-year-old child was guilty of murder

and battery, the Indiana Supreme Court ruled. The child was taken to a hospital because of serious head injuries, a vaginal opening larger than expected for a child her age, and a bruise around her anus. She died two weeks later of a staph infection that developed while she was recovering from brain surgery. The boyfriend admitted hitting and kicking the child several times. On appeal from his conviction, he claimed he was not responsible for her death. He argued that because less than 0.015% of hospital patients die of staph infections it was an extraordinary intervening cause making it unfair to hold him responsible for her death. Affirming his conviction, the court said that the staph infection was a direct result of the surgery and hospitalization caused by the injuries he inflicted.—*Gibson v. State of Indiana*, 515 N.E.2d 492 (Ind. Sup. Ct., Nov. 13, 1987)

Hospital Not Liable For Visitor's Fall

A hospital was not liable for injuries to a hospital visitor who slipped and fell, an Indiana appellate court ruled.

The visitor was found lying on the floor in a restroom. He was admitted to the hospital for observation and later was transferred to another hospital. He was treated and underwent surgery but his condition failed to improve. Nine days later he died from a head injury.

Affirming summary judgment in favor of the hospital, the court said the patient's estate failed to prove the floor was slick or slippery. Since the estate failed to establish that the hospital was negligent, the hospital was entitled to summary judgment.—*Ogden Estate v. Decatur County Hospital*, 509 N.E.2d 901 (Ind. Ct. of App., July 9, 1987)

CANCER CORNER

WILLIAM M. DUGAN, JR., M.D., Indianapolis

THE GOVERNOR'S HEALTH PROJECT of the Indiana Department of Human Services is working with a smoking cessation task force as part of the Healthy Older People initiative. The task force includes professionals from business, education and health care fields and has developed educational materials that address the smoking cessation needs of the 55-year-old and older population. Jean Elmore, R.N., is chairman of the task force, which sent letters signed by Gov. Robert Orr to about 11,000 doctors and dentists in Indiana asking them to stress smoking cessation to their older patients. Brochures titled "How Much Has Smoking Cost You?" are available from the Indiana Department of Human Services, Governor's Health Project, 251 N. Illinois, P.O. Box 7083, Indianapolis, Ind. 46207-7083, or call (317) 232-1207.

ATLAS OF U.S. CANCER MORTALITY, Atlas of Mortality Among Whites: 1960-1980 is available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Data tapes may be purchased from the National Technical Information Service, 5285 Port Royal Road, Springfield, Va. 22161.

THE NATIONAL CANCER INSTITUTE (NCI) is sponsoring an education and information program to increase the number of patients who participate in cancer treatment studies (clinical

trials). Cancer treatment studies are a critical step in the development of new approaches to improve cancer treatment. Therapies validated by three decades of studies have greatly increased cancer survival rates for many types of cancer. NCI is undertaking a special recruitment initiative for today's treatment studies because the current level of patient participation is inadequate for maximizing progress.

Overall estimates suggest that each year only about 25,000 of the more than 1 million Americans newly diagnosed with cancer take part in NCI-sponsored treatment studies. Some cancers in which new treatment approaches are most promising have the lowest clinical trial participation rates, such as studies of chemotherapy and surgery (adjuvant chemotherapy) for colon and rectal cancers.

Today many promising treatment approaches have been developed, but their effectiveness and safety cannot be evaluated adequately unless enough patients agree to participate in treatment studies.

Increased enrollment in clinical trials could mean that new treatment approaches could be tested sooner and scientific questions could be answered sooner. Also, individual studies could proceed more quickly and less expensively. In addition, treatment studies provide the most up-to-date cancer care, whether patients receive a new treatment approach or the best current

standard therapy, which is often compared with the new approach for effectiveness. Wider participation would allow more patients to benefit from the sophisticated therapy that trials provide.

These improvements in cancer care should help NCI reach its goal of reducing cancer mortality rates by the year 2000. The free NCI booklet, "What Are Clinical Trials All About?" is available from the Office of Cancer Communications, National Cancer Institute, Building 31, Room 10A-24, Bethesda, Md., 20892. The publication number is 86-2706.

THE LEUKEMIA SOCIETY OF AMERICA, through its patient aid program, has developed local family support groups throughout the country. The society recognizes the special needs of people with leukemia, Hodgkin's disease, lymphoma or multiple myeloma.

Program goals are to encourage greater communication between patients and their families, their medical team and their friends. Patients, their family members and those who have a relative or friend who has died of a leukemia-related disease are invited to the support group meetings. There is no charge for the service. For information on meeting times and locations, write to the Leukemia Society of America, 4720 Kingsway Dr., Indianapolis, Ind. 46205, or call (317) 255-8787.

CME QUIZ

TO OBTAIN ONE HOUR OF CATEGORY 1 AMA CME CREDIT, answer the following questions by circling the correct answer on the answer sheet below. Complete and clip the application form and mail it to: Indiana University School of Medicine, CME Division, BR 156, 1226 W. Michigan St., Indianapolis 46223.

Glaucoma Medications

CONTINUED FROM PAGES 105-107

1. Asthma may be exacerbated by each of the following agents except:
 - a. Dipivalyl Epinephrine
 - b. pilocarpine
 - c. Bunolol
 - d. timolol
2. Systemic side effects of beta-adrenergic blocking agents include each of the following except:
 - a. bradycardia
 - b. cardiac irritability
 - c. impotence
 - d. bronchospasm
3. The agents most likely to cause systemic side effects include all of the following except:
 - a. acetazolamide
 - b. betoptic
 - c. pilocarpine
 - d. Neptazane
4. All of the following medications are used in the treatment of glaucoma as eyedrops and are therefore frequently overlooked as a cause of systemic side effects except:
 - a. acetazolamide
 - b. Dipivalyl Epinephrine
 - c. Phospholine Iodide
 - d. Bunolol
5. Which of the following agents may cause prolonged apnea and paralysis in association with general anesthesia?
 - a. Timoptic
 - b. Diamox
 - c. Phospholine Iodide
 - d. pilocarpine
6. Systemic side effects of carbonic anhydrase inhibitors commonly include each of the following except:
 - a. anorexia
 - b. depression
 - c. tachycardia
 - d. renal stones
7. Aplastic anemia related to the use of carbonic anhydrase inhibitors is dose related and reversible with cessation of the drug.
 - a. true
 - b. false
8. A sulfonamide-related skin reaction is seen with:
 - a. Phospholine Iodide
 - b. Propine
 - c. acetazolamide
 - d. Betagan
9. Treatment of bronchospasm related to use of Timoptic is best treated by:
 - a. switching to Betagan
 - b. stopping the drug
 - c. instituting theophylline
 - d. observation
10. Gastrointestinal side effects (anorexia, nausea, diarrhea, etc.) may be associated with each of the following except:
 - a. pilocarpine
 - b. Echothiophate Iodide
 - c. Dipivalyl Epinephrine
 - d. methazolamide

JANUARY CME QUIZ Answers

Following are the answers to the CME quiz that appeared in the January 1989 issue: "Persistent Pulmonary Hypertension of the Newborn."

1. f
2. d
3. b, d
4. b
5. d
6. d
7. e
8. b
9. c
10. b, d

Answer sheet for Quiz: (Glaucoma Medications)

- | | |
|------------|-------------|
| 1. a b c d | 6. a b c d |
| 2. a b c d | 7. a b |
| 3. a b c d | 8. a b c d |
| 4. a b c d | 9. a b c d |
| 5. a b c d | 10. a b c d |

Name (please print or type)

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To be eligible for this month's quiz, send your completed, signed application before March 10, 1989, to the address appearing at the top of this page.

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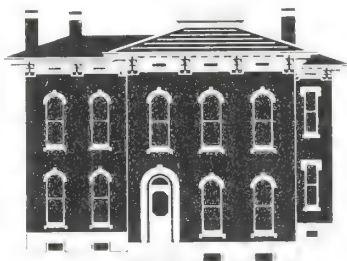
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So, if they don't tell you first, ask them what they're taking and if the medicines are causing any problems. Take a complete medications history including both prescription and non-prescription medicines.

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So re-introduce the oldest advance in medicines. Make talking a crucial part of your practice. It isn't a thing of the past. It's the way to a healthier future.

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Plastic Surgeons Refute Dangers of Breast Implants

The American Society of Plastic and Reconstructive Surgeons reports that silicone gel implants do not cause breast tumors in humans. This statement, which was endorsed by the American Society for Aesthetic Plastic Surgery, was issued in response to claims by a consumer advocacy group that a recent study links silicone gel implants to the development of breast cancer.

Dr. George Reading, president of ASPRS, said current data indicate that breast cancer of any type is not any more common in augmented women than in women without implants. Dr. Garry Brody, a clinical professor of plastic surgery at the University of Southern California, said if silicone carried special dangers, people with pacemakers and plastic joints would have shown higher than normal incidences of cancers.

Grants Available From Diabetes Foundation

The Juvenile Diabetes Foundation International has research grants available for 1989 and 1990.

To obtain an application, write Grant Administrator, Juvenile Diabetes Foundation International, 432 Park Avenue South, New York, N.Y. 10016. Completed applications must be received by March 1, 1989.

Clipping Service New Feature of AMA/NET

The AMA/NET has introduced the Clipping Service, a new service that monitors developments in medicine 24 hours a day and holds items of interest for review.

The service automatically searches the EMPIRES literature database, the Social & Economic Aspects of Medicine (SEAM) database and the Associated Press Medical News Service for new information on a subject of your choice.

For information, call 1-800-426-2873.

Send your news items and comments to the Editor, INDIANA MEDICINE, 3935 N. Meridian St., Indianapolis 46208.

NDMDA Announces Times and Locations of Meetings

The National Depressive and Manic Depressive Association (NDMDA), an organization that offers education and peer support to its members, announced the following meeting dates, times and locations:

St. Vincent Hospital and Healthcare Center, 2001 W. 86th St., Indianapolis, Schaefer Room C, monthly meetings on the second and fourth Mondays, 7-9 p.m.; contact Janie at (317) 631-5553.

Valle Vista Hospital, 898 E. Main St., Greenwood, Conference Room, monthly meetings on the first and third Mondays, 6:30-8:30 p.m.; contact Myra at (317) 359-6666.

Danville, Greencastle, Brownsburg, 280 E. Main St., Danville, monthly meetings on the second and fourth Thursdays, 7-9 p.m.; contact Heath at (317) 839-8818.

Lafayette Home Hospital, 24 South St., Lafayette, Cafeteria Conference Room C, monthly meetings on the second and fourth Tuesdays, 7-9 p.m.; contact Michele at (317) 463-7283.

For more information on forming an NDMDA support group, write to Janie Teixler, Central Indiana Coordinator, NDMDA of Central Indiana, 1408 Broadway, Indianapolis, Ind. 46202 or call (317) 631-5553.

Journal of Obstetrics and Gynecology

Video Review

The Video Journal of Obstetrics and Gynecology is a new and innovative video journal for the practicing obstetrician/gynecologist. Volume 1 contains three topics.

In the first segment, Dr. Stephen Cruikshank graphically presents the

sacrospinous suspension of the vagina as a prophylactic measure for a patient undergoing a vaginal hysterectomy for uterine prolapse. The photography is excellent, and the description of the procedure is adequate and concise. Prophylactic antibiotic therapy and the controversies concerning sacrospinous fixation are discussed.

In the second segment, Dr. David Meldrum elaborates on the findings indicating that gonadotropin-releasing hormone agonists are an effective and preliminarily improved method for treating patients with endometriosis. The findings are impressive and may represent a major breakthrough in the treatment of endometriosis.

In the third segment, Dr. Fernando Arias discusses the practical applications and simplicity of the transabdominal surgical technique for cervical-uterine cerclage when the transvaginal approach has failed or is inadequate. The photography of this surgical technique is satisfactory. Finally, indications and complications of the procedure are discussed.

The Video Journal of Obstetrics and Gynecology is a good source for the practicing obstetrician/gynecologist to use in continuing education. It is accredited for Category I CME credits. The video is a worthwhile technique for teaching residents in the discipline of obstetrics/gynecology.

A one-year subscription for the video is \$89.95. The cost includes six issues that are available in VHS or Beta formats. Each issue is approximately one hour and contains two or three segments.

For a subscription, write Medical Video Productions, 450 N. New Ballas Road, Suite 205, St. Louis, Mo. 63141.—Edwin S. McClain, M.D., Indianapolis.

Here and There ...

Dr. Richard H. Stein, director of the anesthesiology service at Good Samaritan Hospital in Vincennes, was chosen president-elect of the American Society of Anesthesiologists.

Here and There . . .

Dr. Donna A. Wilkins of Muncie has been named health officer for the reformed Delaware County Health Department.

Dr. A. Alan Fischer, a professor and chairman of the Department of Family Medicine at the Indiana University School of Medicine, was honored at the Governor's Conference on Aging in Evansville when he was awarded the "Sagamore of the Wabash" by Gov. Robert Orr. He was also the keynote speaker at the 13th Annual Community and Economic Development Conference in Louisville, Ky., where he spoke on the recently released report by the Institute of Medicine/National Academy of Sciences on *Homelessness, Health and Human Needs*.

Dr. David R. Cain of New Castle has been named a fellow of the American Academy of Family Physicians.

Dr. David F. Sciortino and **Dr. Rao V.P. Mantravadi** of Fort Wayne have each been awarded \$7,500 research grants from the Hoosier Oncology Group of the Walther Medical Research Institute in Indianapolis.

Dr. John H. Mader of Richmond received the 1988 Paul S. Rhoads Humanity in Medicine Award at the annual Rhoads Humanity in Medicine lecture at Reid Memorial Hospital.

Dr. Douglas A. Darbro of Greenwood has created software that is compatible with IBM PCs and serves as a diagnostic tool for physicians seeking a patient's complete medical history.

Dr. William R. Rhyne of Fortville attended the 38th Annual Obesity and Associated Conditions Symposium of the American Society of Bariatric Physicians.

Dr. Stephen W. Perkins of Indianapolis received the American Academy of Facial Plastic and Reconstructive Surgery Distinguished Education Award during the group's fall meeting in Washington, D.C.; he is the first recipient of the award. He also was a guest speaker in Manzanillo, Mexico, during the Mexican Congress of Otolaryngologists.

Dr. Marshall E. Stine of Bremen was the guest of honor at an open house sponsored by Community Hospital in Bremen; he was recognized for 40 years of medical service.

Dr. William E. Graham of Fort Wayne has been elected chairman of the Indiana Section of the American College of Obstetricians and Gynecologists for a three-year term.

Dr. Louis J. Calli Jr. of Bloomington has been elected to fellowship in the American College of Cardiology.

Dr. Danyanti R. Patel of Anderson has been certified by the American Board of Pediatrics.

Dr. Clifford A. Wiethoff, a Seymour surgeon, is retiring from active practice after 37 years of service in Washington County.

Dr. Larry G. Cole, a Yorktown general practitioner, was appointed to the Delaware County Board of Health.

Dr. John C. Johnson, medical director of the emergency department at Porter Memorial Hospital in Valparaiso, was elected secretary-treasurer of the board of the American College of Emergency Physicians.

Dr. Hanus J. Grosz of Indianapolis presented a paper on "Mu Alcoholism: The Pre- and Paramenstrual Abuse of Alcohol" at the Second World Congress on Drugs and Alcohol in Tel Aviv, Israel.

Physician Recognition Awards



The following ISMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned, and is acceptable proof in most states requiring CME in re-registration that the mandatory hours of CME have been accomplished.



Arata, Justin E., Fort Wayne
Batacan, George A., Michigan City
Brandewie, Pilar R., South Bend
Brantly, James M., Indianapolis
Cook, Thomas L., Evansville
De La Flor, Eduardo P., Evansville
De La Paz, Oscar G., Merrillville
Dickerson, Gregg A., Muncie
Elmore, Michael F., Beech Grove

Fondak, Alexander A., Kokomo
Fulton, William H., Indianapolis
George, John W., Munster
Graham, Nelson V. Jr., Evansville
Lawrence, Joseph C., Evansville
Liffick, Thomas F., Evansville
Ly, Lily A., Portland
Nero, Richard P., Madison
Parker, E. Camille, Logansport
Penland, William R., Evansville
Pletzer, Arden C., Indianapolis

Renshaw, Mark A., Fort Wayne
Romain, Louis F., Fort Wayne
Smith, Ray C. III, Indianapolis
Spencer, C.H., Fort Wayne
Stewart, L. Ray, Evansville
Summers, Michael L., Greenfield
Vicar, Andrew J., Indianapolis
Walker, Grace L., Terre Haute
Zettelman, John L., Chesterton

Here and There ...

Dr. William R. Nunery, an Indianapolis ophthalmologist, presented courses at the American Academy of Ophthalmology on "Medical and Surgical Management of Orbital Fractures" and "Current Concepts and Controversies in Orbital Disorders."

Dr. William E. Graham of Fort Wayne was elected chairman of the Indiana Section of the American College of Obstetricians and Gynecologists for a three-year term.

Dr. Eugene G. Roach, medical director at the Anderson Center at St. John's Medical Center in Anderson, recently participated in an exchange program with the People's Republic of China for the purpose of cancer research and education.

Dr. Joe G. Conley of New Albany was elected president of the American Cancer Society, Indiana Division, Inc.

Dr. C. William Hanke of Indianapolis was elected vice president of the American Cancer Society, Indiana Division, Inc.

Dr. Richard G. Huber of Bedford attended the annual Scientific Assembly of the American Academy of Family Physicians in New Orleans, La.

New ISMA Members

Stephen M. Baldwin, M.D., New Albany, obstetrics and gynecology.

Jeffrey R. Beardmore, M.D., Lafayette, pediatrics.

Joseph W. Bremer, M.D., Lafayette, otolaryngology.

Rebecca L. Bushong, M.D., Muncie, dermatology.

Mario R. Contreras, M.D., Lafayette, anatomic and clinical pathology.

Gerald T. Costello, M.D., Muncie, anesthesiology.

Jeffrey L. Creelius, M.D., Lafayette, neurological surgery.

Joseph W. Depenbusch, M.D., Lafayette, anatomic and clinical pathology.

Gregg A. Dickerson, M.D., Muncie,

therapeutic radiology.

Timothy J. Durham, M.D., South Bend, pediatrics.

Samuel R. Eby, M.D., Fort Wayne, nephrology.

Scott C. Emerick, M.D., Elkhart, general surgery.

Ralph W. Fitz, M.D., Terre Haute, cardiovascular diseases.

Robert M. Friedmeyer, M.D., Bloomington, pediatrics.

Gary J. Gagliardi, M.D., Franklin, internal medicine.

Maria A. Gutierrez, M.D., Mishawaka, anesthesiology.

Mohamed K. Halabi, M.D., Michigan City, child psychiatry.

Donald E. Harris, M.D., Columbus, neurology.

Im S. Hong, M.D., East Chicago, psychiatry.

Larry C. Hughes, D.O., Mooresville, family practice.

Patricia K. Johnson, M.D., Bloomington, pediatrics.

David M. Keller, M.D., Hagerstown, family practice.

Antigoni Kencos, M.D., Crown Point, radiology.

Hee-Seork Kim, M.D., Crown Point, diagnostic radiology.

James H. Kim, M.D., Gary, family practice.

Jeffrey A. Kushner, M.D., South Bend, internal medicine.

Michael D. Levine, M.D., Indianapolis, plastic surgery.

Michael B. Lockwood, M.D., West Lafayette, rheumatology.

James M. Lorber, M.D., South Bend, general surgery.

James C. Macke, M.D., Mooresville, orthopedic surgery.

Jerome E. March, D.O., Dyer, family practice.

William H. Mohr, M.D., Kokomo, family practice.

James S. Mooney, M.D., Chandler, family practice.

James M. Moriarity, M.D., Notre Dame, family practice.

James J. Nocon, M.D., Indianapolis, obstetrics and gynecology.

Ki Y. Park, M.D., East Chicago, psychiatry.

Thomas C. Passo, M.D., Anderson, internal medicine.

Michael J. Pepper, M.D., Flossmoor, Ill., emergency medicine.

Thaddaeus M. Poe, M.D., Danville, family practice.

John S. Reece, M.D., Muncie, family practice.

Edsel S. Reed Jr., M.D., Floyds Knobs, diagnostic radiology.

David S. Risner, M.D., Evansville, anatomic and clinical pathology.

Dean S. Sandquist, M.D., Muncie, anatomic pathology.

Robert L. Sasser, M.D., New Albany, internal medicine.

Susan M. Schnerre, M.D., Lafayette, obstetrics and gynecology.

Ralph A. Sellers II, M.D., Evansville, diagnostic radiology.

Steven Snyder, D.O., Milltown, general practice.

Gregory L. Spangler, M.D., Elwood, family practice.

Brian G. Sperl, M.D., Indianapolis, internal medicine.

Kenneth S. Stone, M.D., Lafayette, cardiovascular surgery.

James M. Torres, M.D., Muncie, cardiovascular diseases.

Theresa A. Travis, M.D., Bedford, internal medicine.

David A. Trenkner, M.D., Fort Wayne, therapeutic radiology.

Tamara P. Vokes, M.D., Munster, internal medicine.

Mahim K. Vora, M.D., Darien, Ill., psychiatry.

Richard A. Weddle, M.D., Bloomington, gastroenterology.

Roy B. Weston, M.D., Huntington, anesthesiology.

Scott H. Wolf, M.D., Flossmoor, Ill., radiology.

Kevin R. Young, M.D., Evansville, internal medicine.

Residents:

Marc W. Campbell, M.D., Carmel.

Jean L. Kraft, M.D., Indianapolis, diagnostic radiology.

Steven M. Schneider, M.D., Indianapolis, psychiatry.

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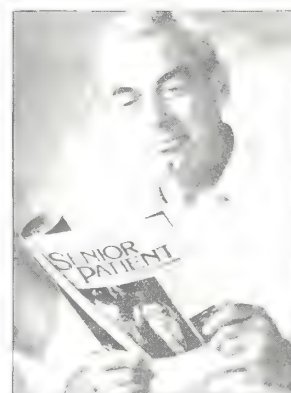
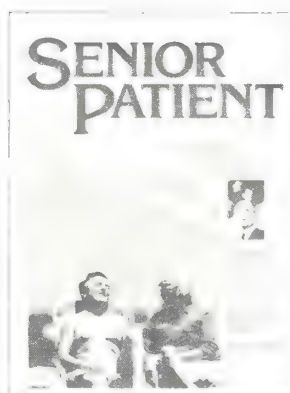
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- How lab values for older patients vary from normal

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OBITUARIES

Thomas F. Keough, M.D.

Dr. Keough, 59, a Warsaw physician specializing in cardiovascular diseases, died Nov. 14 at Kosciusko Community Hospital.

He was a 1959 graduate of the University of Chicago School of Medicine, where he was elected to Alpha Omega Alpha. He served in the U.S. Army Medical Corps from 1952 to 1954.

Dr. Keough was a past chief of staff at Kosciusko Community Hospital and director of the hospital's coronary and intensive care units. He was a past president of the Kosciusko County Medical Society and the Kosciusko County Heart Association.

Paul E. Burns, M.D.

Dr. Burns, 78, a retired Montpelier physician, died Nov. 18 at Ball Memorial Hospital in Muncie.

He graduated from the Indiana University School of Medicine in 1942 and started his practice in Montpelier in 1943. He was city and county health officer 25 years.

Dr. Burns received a presidential citation from Pres. Dwight Eisenhower recognizing his service to the nation and the Selective Service System. In 1965, the Mental Health Association of Indiana named him Physician of the Year for his help in organizing its Blackford County chapter in 1951.

Paul D. Reynolds, M.D.

Dr. Reynolds, 60, of Franklin, died Nov. 17, at Johnson County Memorial Hospital.

He graduated from the Indiana University School of Medicine in 1964. He was an Army veteran of the Korean War.

Dr. Reynolds was a general practitioner in Franklin and was on the staff at Johnson County Memorial Hospital 25 years.

George D. Buckner, M.D.

Dr. Buckner, 67, of Fort Wayne, died Nov. 10 in a boating accident on Pere Marquette Lake near Ludington, Mich.

He was a 1944 graduate of the Indiana University School of Medicine.

He was a member of the International College of Surgeons, the American Society of Abdominal Surgeons and the American College of Chest Physicians.

Edmond O. Alvis, M.D.

Dr. Alvis, 94, an Indianapolis ophthalmologist, died Nov. 5.

He was a 1921 graduate of the Indiana University School of Medicine. He practiced in Kendallville, Bedford and Indianapolis before retiring in 1976.

He was board-certified and was a member of the ISMA Fifty Year Club.

Carl B. Harris, M.D.

Dr. Harris, 80, a retired Carmel ophthalmologist, died Nov. 20.

He was a 1934 graduate of the Indiana University School of Medicine, a professor of ophthalmology at St. Vincent and Methodist hospitals and a clinical professor emeritus of ophthalmology at Indiana University.

Dr. Harris retired in 1978 after practicing 37 years. He was a member of the American Academy of Ophthalmology and Otolaryngology and was board certified.

Russell L. Arbuckle, M.D.

Dr. Arbuckle, 80, of Indianapolis, died Dec. 6 at his home.

He was a 1932 graduate of the Indiana University School of Medicine, an Army veteran of World War II and a former associate in dermatology/syphilology at Marion County General Hospital.

Dr. Arbuckle was in private practice for many years.

Earl P. Cripe, M.D.

Dr. Cripe, 76, a retired Bremen physician, died Dec. 9 in Ossian Health Care in South Bend.

He graduated from the Indiana University School of Medicine in 1939. He was a captain and flight surgeon during World War II.

Dr. Cripe was a member of the American Medical Association, the American College of Emergency Physicians, the Bremen Masonic Lodge, the Fort Wayne Valley of the Scottish Rite and the South Bend Shrine.

Memorials: Indiana Medical Foundation

The Indiana Medical Foundation, Inc. was formed by the Indiana State Medical Association "for religious, charitable, scientific, literary or educational purposes." It provides financial assistance to support the educational mission of Indiana Medicine.

Contributions made to the Foundation are deductible by donors in accordance with the Internal Revenue Code. Gifts are deductible for Federal estate and gift tax purposes.

The Foundation is pleased to acknowledge the receipt of gifts in remembrance of the following individuals:

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3935 North Meridian Street

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A foundation for charitable, educational, and scientific purposes, organized by the ISMA as an endowment fund to support the educational mission of the Association and INDIANA MEDICINE.

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The Foundation is managed by a board of directors that comprises the members of the ISMA Executive Committee. At present, proceeds from the Foundation investments are awarded to INDIANA MEDICINE to further the continuing medical education program.

Memorial contributions made to the Foundation in lieu of flowers will be acknowledged by the secretary in a letter to the family of the deceased.

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“You Can’t Catch Fish With Strawberries”

by Arthur R. Pell, Ph.D., Consultant
Dale Carnegie & Associates, Inc.

“I often went fishing up in Maine during the summer. Personally, I am very fond of strawberries and cream, but I have found that for some strange reason, fish prefer worms. So when I went fishing, I didn’t think about what I wanted. I thought about what they wanted. I didn’t bait the hook with strawberries and cream. Rather I dangled a worm in front of the fish and said: “Wouldn’t you like to have that?” “Why not use the same common sense in fishing for people?”

Dale Carnegie in
How to Win Friends and Influence People

One of the most common errors people make in dealing with others is to assume that the other person wants what they want out of their relationships, their jobs, their lives. People differ one from the other and just because you are enthusiastic about something is no assurance that others share your enthusiasm.

Supervisors carry this fallacy into the way they attempt to motivate their people. Some of the more frequently occurring misunderstandings of motivational approaches are money, opportunity and challenge. Any or all of these may motivate some of your people, but to assume that they are desired by all can be misleading.

Money as a Motivator

The sales manager was perplexed. “Our company has one of the best incentive systems in the business for its sales people,” he commented, “yet most of our sales force are earning much less than they could. Why don’t they stretch to get the money that is theirs for the taking?”

This program has been faced by managers as long as incentive systems have been in existence. The money is there, but the people do not reach out to get it. Each of us has only a finite amount of time, energy and emotion. In order to make the additional money offered by the incentive plan, we must give more of this time, energy and emotional commitment to the job. Consciously or more likely subconsciously, each of us analyzes how much of this limited time, energy and emotion we are willing to take away from other aspects of our lives—from our family, from our social life, from our religious activities, from our hobbies, from our health building activities—to give to the job in order to make the additional income. Often—perhaps, more often than not, we are not willing to give up any of these other aspects of our lives that mean so much to us in order to make more money.

Of course, some people are more motivated by money than others. Each of us has established a standard of living which governs the level of our need for money. Sure, everybody would like to make a few more dollars—if it wasn’t necessary to stretch too hard to earn them. However, once the standard established for themselves is reached, most people will not sacrifice other facets of their lives for increased income.

Opportunity for Advancement as a Motivator

“Everybody wants to get ahead. That’s the American way. Are you sure? A well-known consultant in the field of motivation posed this situation to the attendants at over 100 seminars he conducted throughout the United States in 1987 and 1988. “If you were told by your company that if you would render an outstanding performance for the next six months, you would receive a promotion, how many of you would commit yourself to do this additional work in order to obtain that advancement?”

On a national average, less than 30 percent of those surveyed indicated that they would try. Does this mean that opportunity does not motivate people? Of course not. Opportunity is an excellent motivator *for those who desire it*. But as everybody does not want advancement, offering it to them as a motivator is the same as offering strawberries to the fish.

Challenge as a Motivator

Most people like to meet and beat challenges. If we can challenge a person on the job, it should motivate them to do more or better work. But, as in the other areas we discussed, not always.

Some people fear challenge and it acts as a demotivator. Many sales organizations run sales contests to stimulate sales. For those of you who are not familiar with sales contests, be aware that a good sales contest is not one in which the person who makes the most sales wins. Such contests are biased in favor of the people who are currently top producers. In order for companies to motivate the less successful salespeople to produce more, the contest must be designed so that anybody can win. This can be done in a variety of ways.

Dr. Sonia Altschuler, an Industrial Psychologist, studied several of these contests and found that often 20 to 30% of the sales force did not participate in the contest. When she asked them why, the typical response was “I didn’t think I could win.” As the contest was designed so that anybody could win, this was not the true reason. Deeper evaluation uncovered that many were afraid of contests. They were concerned that losing the contest would make them feel bad about themselves, so by not trying, they did not lose self esteem.

To assure that a challenge will motivate the participants, ascertain how they feel about the specific challenge and by orienting the challenge to their needs, it may convert the negative to a positive.

Look for Individual Differences

People differ from each other and what motivates one may not motivate the other. You can’t catch fish with strawberries. Indeed, all fish will not be enticed by worms. You need flies to catch trout. Take the time to learn what motivates your people. Talk to them. Listen when they respond. Learn their likes and dislikes. Observe the way they act and react.

You may find that Claudia is a very creative person. This is important for you to know. If you want to motivate Claudia, the best way is to appeal to her creativity. Offer her an opportunity to use this creativity and she will respond with enthusiasm with the resultant increase in productivity.

You may learn that Richard is a very sensitive person. By being conscious of this sensitivity you can develop motivational approaches that will reach Richard.

There is no universal motivator. Many approaches are needed, each tailored to the individual. That is what makes the job of a manager so challenging—and so rewarding when it is done well. We can get the best from our people, if we take the time and the effort to know what each of them desires and develop our motivational programs to help them reach those desires.

Pocket purse size reprints may be purchased (10 for \$10.00) or (25 for \$20.00) from Dale Carnegie & Associates, Inc. 1475 Franklin Avenue, Garden City, NY 11530

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FAMILY PRACTICE OPPORTUNITY—BC/BE; North Central Indiana; flexible ER schedule for fully accredited county hospital in return for exceptional income, opportunity to set up own zero overhead practice, comprehensive benefits with all factors negotiable to meet specific practitioner needs. Send CV or contact collect: James Wyatt, Corporate Staffing Resources, 420 South Fourth Street, Elkhart, IN 46516, (219) 522-2396.

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AVAILABLE FOR LEASE—Approximately 2,400 square feet of professional space located near the junction of Route 30 and I-65 in Merrillville, Ind. Office decor is extraordinary and the office is now fully furnished. Furnishings can be leased, purchased or removed. Although the space is ideal for a solo or small group practice, the space could also be used on a time share basis. Personnel can be provided. The office layout also extends itself to nonmedical use. For additional information, please call Nancy Tuskey at (219) 232-4694.

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For more information, contact Denise Le Doux, PPS coordinator, Indiana State Medical Association, (317) 925-7545 or 1-800-382-1721.

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VASOTEC®

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Warnings: **Angioedema:** Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension: Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Heart failure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed, caution should be observed when initiating therapy (See DOSAGE AND ADMINISTRATION). Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in heart failure patients), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments (See PRECAUTIONS, Drug Interactions and ADVERSE REACTIONS). In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. If excessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis: Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

Precautions: **General Impaired Renal Function:** As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION.)

Hyperkalemia: Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation.

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC (See Drug Interactions).

Surgery/Anesthesia: In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients

Angioedema: Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension: Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

Hyperkalemia: Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia: Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

NOTE: As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions

Hypotension: **Patients on Diuretic Therapy:** Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour (See WARNINGS and DOSAGE AND ADMINISTRATION).

Agents Causing Renin Release: The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents: VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyl-dopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium: A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. Although a causal relationship has not been established, it is recommended that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be monitored frequently.

Pregnancy: **Category C:** There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies in pregnant women. VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: Milk in lactating rats contains radioactivity following administration of 14 C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use: Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 2987 patients.

Hypertension: The most frequent clinical adverse experiences in controlled trials were headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

Heart Failure: The most frequent clinical adverse experiences in both controlled and uncontrolled trials were dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category:

Cardiovascular: Myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (See WARNINGS, Hypotension); cardiac arrest, pulmonary embolism and infarction, rhythm disturbances, atrial fibrillation, palpitation.

Digestive: Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric: Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital: Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION); prostatic hypertrophy.

Respiratory: Bronchospasm, rhinorrhea, asthma, upper respiratory infection.

Skin: Herpes zoster, pruritus, alopecia, flushing, photosensitivity.

Other: Muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, linitis.

A symptom complex has been reported which may include fever, myalgia, and arthralgia, an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy.

Angioedema: Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately (See WARNINGS).

Hypotension: In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure (See WARNINGS).

Clinical Laboratory Test Findings

Serum Electrolytes: Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen: In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis (See PRECAUTIONS). In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit: Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g% and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown): In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported.

Liver Function Tests: Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: **Hypertension:** In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension (See WARNINGS). If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed. If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour (See WARNINGS and PRECAUTIONS, Drug Interactions).

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium (See PRECAUTIONS).

Dosage Adjustment in Hypertensive Patients with Renal Impairment: The usual dose of enalapril is recommended for patients with a creatinine clearance > 30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤ 30 mL/min (serum creatinine ≥ 3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure: VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour (See WARNINGS and PRECAUTIONS, Drug Interactions). If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses (See CLINICAL PHARMACOLOGY, Pharmacodynamics and Clinical Effects). Dosage may be adjusted depending upon clinical or hemodynamic response (See WARNINGS).

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia: In heart failure patients with hyponatremia (serum sodium < 130 mEq/L) or with serum creatinine > 1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision (See DOSAGE AND ADMINISTRATION, Heart Failure, WARNINGS, and PRECAUTIONS, Drug Interactions). The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg. For more detailed information, consult your MSD representative or see Prescribing Information, Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, PA 19486.

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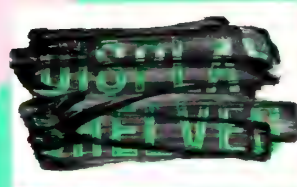


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INDIANA MEDICINE



The Journal of the Indiana State Medical Association

March 1989

Vol. 82, No. 3

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The Journal of the Indiana State Medical Association

March 1989

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Issues concerning the physician's role in decisions to limit medical therapies are complex and the source of much debate.

Multiple prescription rule affects Schedule II drugs 200

Indiana physicians who prescribe Schedule II drugs will be required to use new triplicate prescription forms effective July 1, 1989.

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As the cost of medical care increases, more insurance companies are pulling out of the health care market.

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The Indiana Historical Society is publishing *The Journals of William A. Lindsay*, a book about a 19th century Indiana surgeon.

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COMING:
MULTIPLE
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FORM

Cover story - Indiana's triplicate prescription rule is scheduled to go into effect July 1, 1989. Cover design by Linda Kamer.

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YOCON[®]

YOHIMBINE HCl

Description: Yohimbine is a 3a-15a-20B-17a-hydroxy Yohimbine-16a-carboxylic acid methyl ester. The alkaloid is found in Rubaceae and related trees. Also in Rauwolfia Serpentina (L) Benth. Yohimbine is an indolalkylamine alkaloid with chemical similarity to reserpine. It is a crystalline powder, odorless. Each compressed tablet contains (1/12 gr.) 5.4 mg of Yohimbine Hydrochloride.

Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon[®] is indicated as a sympatholytic and mydriatic. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.^{1,2} Also dizziness, headache, skin flushing reported when used orally.^{1,3}

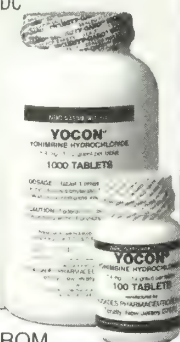
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.^{1,3,4} 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.³

How Supplied: Oral tablets of Yocon[®] 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10.

References:

1. A. Morales et al., New England Journal of Medicine: 1221. November 12, 1981.
2. Goodman, Gilman — The Pharmacological basis of Therapeutics 6th ed., p. 176-188. McMillan December Rev. 1/85.
3. Weekly Urological Clinical letter, 27:2, July 4, 1983.
4. A. Morales et al., The Journal of Urology 128: 45-47, 1982.

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Advertising rates and data available upon request.

ICD-9 coding mandatory on Part B Medicare claims

Beginning April 1, Medicare carriers will require physicians to use ICD-9 codes on all Medicare Part B claims. This mandatory change-over to the ICD-9 coding is a little-known and virtually unpublished requirement that was buried in the Medicare Catastrophic Act of 1988. Failure of physicians to comply with the requirement could result in penalties of up to \$2,000 per incident or exclusion from the Medicare program. The requirement presents problems for most physicians since ICD-9 coding is used mainly by hospitals and physicians who bill electronically. In response to the new requirement, the AMA has persuaded the Health Care Financing Administration to delay enforcement of the provision until June 1 and has launched an awareness campaign to alert physicians to the new requirement. The apparent intent of the conference committee, which added the coding requirement for Medicare Part B claims, was to enable Medicare to match medical diagnoses with prescriptions of outpatient drugs that will be covered under the catastrophic program starting in 1991.

American Medical Television broadcasts begin

Washington Medical Rounds, produced by the AMA, will air on the Discovery Channel from 10 a.m. to 11 a.m. on the last Sunday of the month. The program will examine medical and socioeconomic issues.

Medicare Assistance Program enrollment continues

More than 100 Montgomery County residents age 65 or older have enrolled in the Medicare Assistance Program (MAP). The pilot project began in November in an effort to assure Medicare recipients access to quality care. Under the program, Montgomery County physicians voluntarily agree to accept the Medicare-allowed amount as payment-in-full for enrollees. Applicants must meet income guidelines of up to \$8,655 for a single person or a combined income of less than \$11,595. The average income of enrollees presently certified by the program is \$5,729 a year. Most applicants certified thus far reside in or near Crawfordsville, Ind. Efforts are underway to expand the certification efforts into the rural areas of the county.

Medical malpractice bills prompt physician response

Two bills filed in the Indiana House of Representatives dealing with the Indiana Medical Malpractice Act have resulted in numerous calls to state legislators by physicians. HB 1345, sponsored by Rep. Pat Bauer, D-South Bend, would raise the cap on medical malpractice awards up to \$1 million. The other proposal, HB 1919, sponsored by Rep. Robert E. Hayes, D-Columbus, would provide annual increases in the cap based upon the Consumer Price Index. As February drew to a close, ISMA continued its lobbying efforts against the two bills.

■ medical museum notes

Charles Bonsett, M.D.
Indianapolis

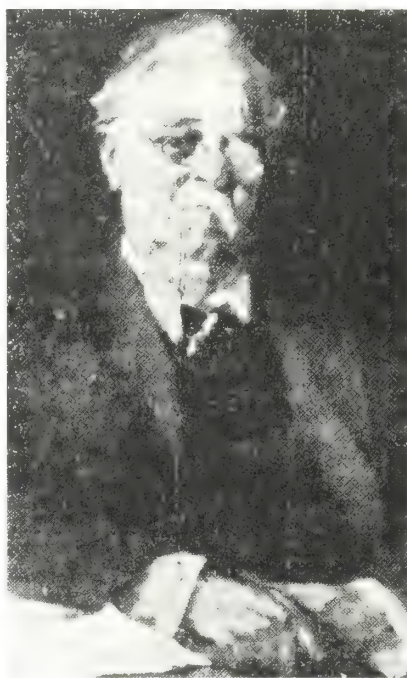
The photograph on this page is the Wayman Adams portrait of "Dr. Oldfish," which appeared in a fragile, yellowed 1919 newspaper. Dr. Oldfish was a pen name of Charles Dennis, a well-known Hoosier newspaperman who wrote a number of articles of local historical interest during the first two decades of this century. He lived from 1844 to 1919. His portrait is now located in the Indianapolis Museum of Art.*

The following excerpt of "Dr. Oldfish" is from the *Indianapolis News*, Jan. 12, 1907:

"... But in 1849 Dr. Wishard brought from Cincinnati to his country home, south of the city, a vial holding 2 or 3 ounces of chloroform.

"It soon went abroad through the neighborhood that 'Doc' Wishard had been to the city, as Cincinnati was then called, and had brought back some of that wonderful stuff 'that puts folks to sleep.' 'Doc' was kept busy showing the magic sleep-producer, and neighbor after neighbor was permitted to smell of it, which only the bravest dared to do, and then in fear and trembling. Doctors miles away became interested. They, too, called to see the strange liquid.

"One day a man on horseback came with a hurry-up call. The doctor of a distant neighborhood desired 'Doc' Wishard to come quick and help him out—bring the chloroform. A farmer had got mixed up with his horses while plowing, and one of his arms had been dislocated at the shoulder. This dislocation the other doctor



Dr. Oldfish

had been unable to reduce.

"When Dr. Wishard arrived, he found the house of the injured man surrounded by neighbors, men and women who had gathered from miles around. They had heard that 'Doc' Wishard had been sent for and that he was to bring with him the bottle of stuff he had bought in Cincinnati. Two or three other doctors were present. The man with the dislocated arm lay on the floor moaning and groaning after the several ineffectual attempts that had been made to put the arm back in its socket.

"Dr. Wishard demanded that the room should be cleared of everybody except the doctors. The wife of the patient was on the verge of hysterics; she did not think she would allow any tinkering doc to try any new-fangled

stuff on her man. She was finally assured that there was no reason for alarm.

"Dr. Wishard pulled off his right boot, leaving him with a foot encased in a good yarn sock. The lookers through the doors and windows, when they saw this preparation, began to breathe heavily. The doctor took the mystic vial out of his saddlebags. Interest became more intense. Some of the onlookers became pale. A cloth was saturated with the chloroform and applied to the nose of the prostrate farmer. Several of the women began to get ready to scream. The limbs of the patient relaxed. He was asleep and snoring gently.

"The doctor put his stocking foot under the armpit of the patient, pulled manfully and the arm slipped into the socket . . .

"And so ended what was probably the first administration of an anesthetic in central Indiana."

The Dr. Wishard who was mentioned in this article was Dr. William Henry Wishard, father of the physician for whom the Wishard Memorial Hospital is named.

An article in the June 6, 1900, issue of the *Indianapolis Press* credits Dr. John M. Gaston as the first Indiana physician to use chloroform, but no details or dates are given.

Both Dr. Wishard and Dr. Gaston were founding members of the Indiana Medical Society in 1849. Both men survived after the turn of the century. □

* I am indebted to Marybelle Burch, the Indiana State Library manuscripts librarian, for finding and making accessible the material on "Dr. Oldfish."

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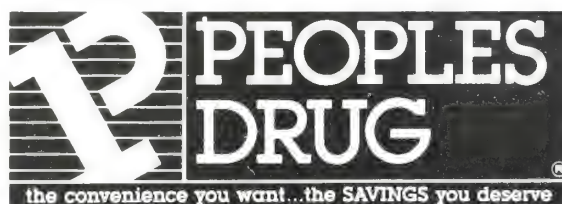
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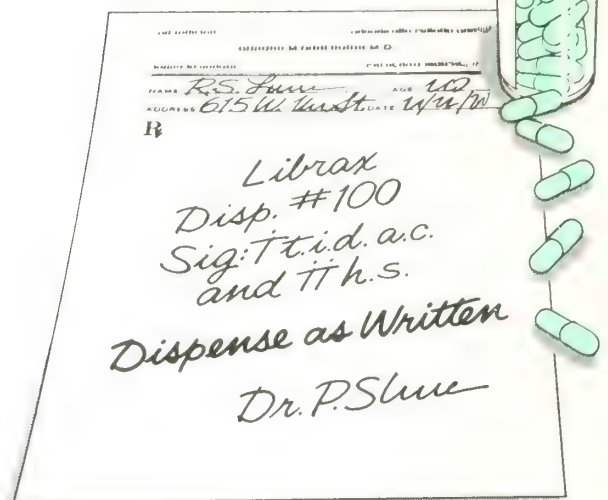
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"Possibly" effective, as adjunctive therapy in the treatment of peptic ulcer and in the treatment of the irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis
Final classification of the less-than-effective indications requires further investigation

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Usage in Pregnancy: Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy. Advise patients to discuss therapy if they intend to or do become pregnant.

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Withdrawal symptoms of the barbiturate type have occurred after discontinuation of benzodiazepines (see Drug Abuse and Dependence)

Precautions: In elderly and debilitated, limit dosage to smallest effective amount to preclude ataxia, oversedation, confusion (no more than 2 capsules/day initially, increase gradually as needed and tolerated) Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider pharmacology of agents, particularly potentiating drugs such as MAO inhibitors, phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions reported in psychiatric patients. Employ usual precautions in treating anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation reported very rarely in patients receiving the drug and oral anticoagulants, causal relationship not established. Inform patients to consult physician before increasing dose or abruptly discontinuing this drug

Adverse Reactions: No side effects or manifestations not seen with either compound alone reported with Librax. When chlordiazepoxide HCl is used alone, drowsiness, ataxia, confusion may occur, especially in elderly and debilitated, avoidable in most cases by proper dosage adjustment, but also occasionally observed at lower dosage ranges. Syncope reported in a few instances. Also encountered: isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent, generally controlled with dosage reduction, changes in EEG patterns may appear during and after treatment, blood dyscrasias (including agranulocytosis), jaundice, hepatic dysfunction reported occasionally with chlordiazepoxide HCl, making periodic blood counts and liver function tests advisable during protracted therapy. Adverse effects reported with Librax typical of anticholinergic agents, i.e., dryness of mouth, blurring of vision, urinary hesitancy, constipation. Constipation has occurred most often when Librax therapy is combined with other spasmolytics and/or low residue diets.

Drug Abuse and Dependence: Withdrawal symptoms similar to those noted with barbiturates and alcohol have occurred following abrupt discontinuance of chlordiazepoxide, more severe seen after excessive doses over extended periods, milder after taking continuously at therapeutic levels for several months. After extended therapy, avoid abrupt discontinuation and taper dosage. Carefully supervise addiction-prone individuals because of predisposition to habituation and dependence

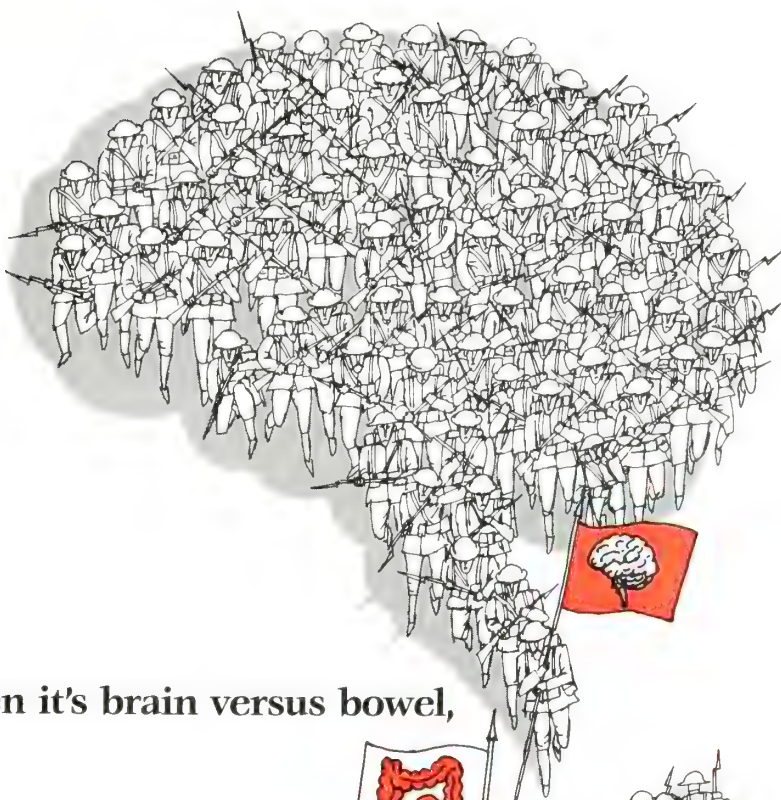


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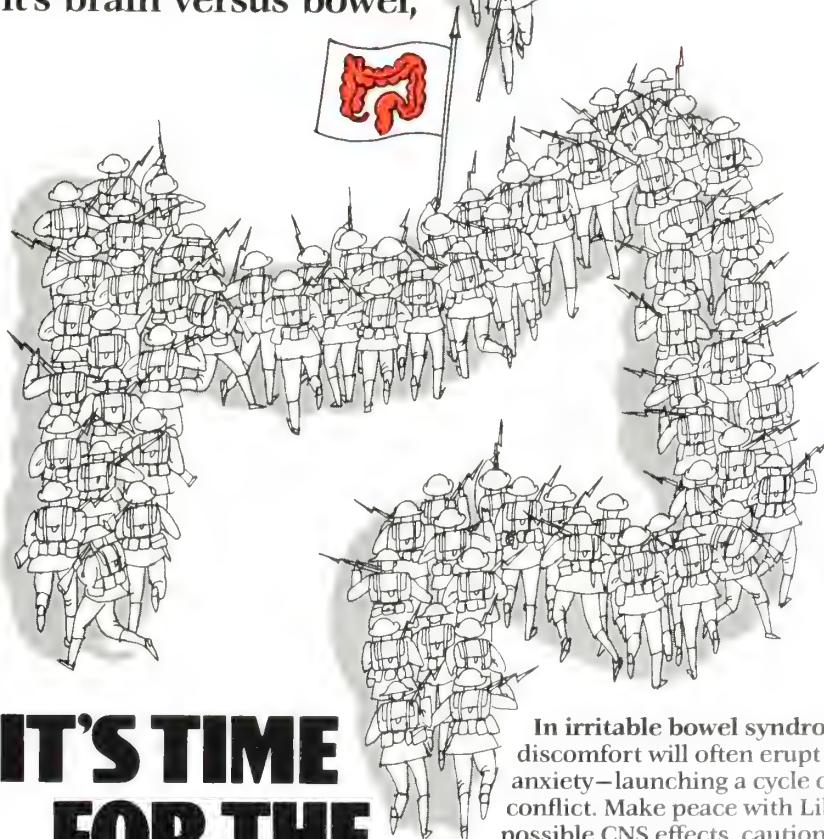
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Fisons Corp. is relaunching Mykrox™ (metolazone) with special seeding programs to evaluate the drug, especially in elderly patients. Mykrox is a low-dose diuretic/antihypertensive agent that eliminates many of the side effects common to other diuretics. It was introduced earlier this year as Microx by Pennwalt Pharmaceuticals, which recently was acquired by Fisons Corp.

A.H. Robins has introduced a new economical 12 oz. size of Robitussin-DM® in response to trade and consumer demand. The new package was introduced to food, drugstore and mass merchandisers' shelves this fall. A.H. Robins also has introduced a new 12 oz. size of Dimetap Elixir.

Abbott Laboratories recently developed two new diagnostic products, which received approval by the U.S. Food and Drug Administration. These products give pediatricians the ability to rapidly diagnose respiratory syncytial virus (RSV) and rotavirus. RSV is believed to be the leading cause of pediatric respiratory ailments and strikes up to half of U.S. infants during the first year of life. Rotavirus, the leading cause of gastroenteritis, is highly contagious and spreads rapidly in pediatric wards and nurseries. The new test for RSV, called Test-Pack RSV, provides results in 20 minutes, as opposed to five hours with current laboratory methods. Test-Pack Rotavirus provides results in 10 minutes.

Biotech Research Laboratories and **E.I. duPont** recently received approval from the U.S. Food and Drug Administration to market a

HTLV-I test, which was jointly developed by the two companies. The test detects antibodies to HTLV-I, a retrovirus that can cause leukemia and other neurological disorders.

Stackhouse Associates, Inc. has announced a new PT 1000, which features a super ULPA filter and an advanced air flow design to enable final stage filtration to 0.01 micron at 99.998% efficiency. The PT 1000 is the latest version of the Stackhouse POINT ONE™ Laser Smoke Evacuator System. The new device is used for evacuating the smoke plume during laser surgery.

Grandcor Medical Systems has issued a data sheet on its new Cardio Mega•T® System, a full disclosure ambulatory ECG system that combines the accuracy of 2-channel FM recording with the versatility, speed and convenience of a personal computer. It covers truer reproduction of ST segment analysis, automatic storage and analysis of the full 24-hour ECG in 20 minutes, recognition and classification of abnormal events and a summary of the patient's hourly arrhythmia profile. For free copies of the data sheet, write Grandcor Medical Systems, 405 Grand Ave., Dayton, OH 45405.

News of what is new in the medical supply industry is composed of abstracts from news releases. Each item published does not necessarily constitute an endorsement of a product or recommendation for its use by INDIANA MEDICINE or by the Indiana State Medical Association.

The Massachusetts Medical Society has announced that "Compact Library: AIDS," a new medical library on CD-ROM, is available from its Medical Publishing Group. This unique library provides the full text of original journal articles, textbook and bibliographic data on all aspects of AIDS, fully linked and integrated into one up-to-date source of information. It is designed for clinicians, nurses, social workers, hospital administrators, medical librarians and educators. The library can be used with most IBM personal computers and compatibles. There are no phone lines, modems, on-line charges or transmission problems. The library will be sold on an annual subscription basis, which provides unlimited access at a fixed cost.

Hoffmann-La Roche received a license from the U.S. Food and Drug Administration to market Roferon®-A, a brand of recombinant human alpha interferon for treatment of AIDS-related Kaposi's sarcoma. Treatment consists of once-daily injections for 10 to 12 weeks, followed by maintenance injections three times a week. Roferon-A is packaged in a ready-to-inject intramuscular or subcutaneous solution and may be given on an outpatient basis or self-administered at home.

Cambridge Health Economics Group published a new book to help physicians estimate the potential impact on their income if a resource-based relative value scale fee schedule were adopted. The book is available by writing to Cambridge Health Economics Group, Inc., 850 Boylston St., Chestnut Hill, MA 02167. □

■ cme calendar

Child Care Conference

The 24th Annual Indiana Multidisciplinary Child Care Conference will be May 17 and 18 at the Hilton in downtown Indianapolis.

The following speakers will be presented: Dr. Carol Baker, pediatric infectious disease; Dr. Nancy Esterly, pediatric dermatology; Dr. Richard Stiehm, immunology; Dr. C. Lawrence Kien, pediatric nutrition; Dr. Norman Frost, ethics; Dr. James Seidel, emergency room medicine; Dr. Margaret Blythe, providing contraception for the sexually active teen; and Drs. David Dunn and Thomas Luseren, neurologic problems.

For registration information, write Dr. Richard L. Schreiner, Chairman, Department of Pediatrics, Indiana University School of Medicine, 702 Barnhill Drive, Indianapolis, IN 46223.

Methodist Hospital CME

Methodist Hospital will sponsor the following continuing medical education events for April and May:

- Apr. 7-8** - Advanced Cardiac Life Support, Methodist Hospital, Wile Hall, Indianapolis.
- Apr. 14-15** - Medical Ethics Seminars, Eagles Crest, Eagle Creek Park, Indianapolis.
- Apr. 21-22** - Advanced Trauma Life Support, Methodist Hospital, Wile Hall, Indianapolis.
- Apr. 28-29** - Primary Care Gynecology Workshop, Methodist Hospital, Auditorium and Wile Hall, Indianapolis.
- May 12** - 1989 Overview of Solid Organ Transplantation, Hyatt Regency, Indianapolis.

May 18-19 - 24th Annual Batman Lecture, Methodist Hospital, Auditorium, Indianapolis.

May 24 - Initial Management of Catastrophic Athletic Injuries, Methodist Hospital, Auditorium, Indianapolis.

Indiana University CME

The Indiana University School of Medicine will sponsor the following CME courses for March, April and May:

- Mar. 22** - Stroke Workshop, Wishard Memorial Hospital, Indianapolis.
- Mar. 29** - Dermatology Update for the Non-Dermatologist, University Place Executive Conference Center and Hotel, Indianapolis.
- Mar. 30** - Hemophilia Care: Health Care Providers Conference, University Place Executive Conference Center and Hotel, Indianapolis.
- Mar. 30-31** - 1989 Symposium on Breast Imaging, University Place Executive Conference Center and Hotel, Indianapolis.
- Apr. 10-12** - Update Workshop in Echocardiography: Coronary Artery Disease, Exercise Quantitation, University Place Executive Conference Center and Hotel, Indianapolis.
- Apr. 10-14** - Electrocardiographic Interpretation of Complex Arrhythmias: A Physiological Approach, Kran-

nert Institute, Indiana University Medical Center, Indianapolis.

- Apr. 14** - Update in Occupational Lung Disease, University Place Executive Conference Center and Hotel, Indianapolis.
- Apr. 20** - Sports Medicine, Reid Memorial Hospital, Richmond, Ind.
- Apr. 20-21** - 12th Annual Arthur B. Richter Conference: Post Traumatic Stress Disorders in Children and Adolescents, University Place Executive Conference Center and Hotel, Indianapolis.
- Apr. 21-23** - Advanced Trauma Life Support, Wishard Memorial Hospital, Indianapolis.
- Apr. 22** - Depression: Recognition and Treatment in Primary Medical Care Setting, Hilton-on-the-Circle, Indianapolis.
- Apr. 26-29** - Annual Migrant Conference, Hyatt Regency Hotel, Indianapolis.
- May 3-5** - New Developments in Neuroradiology, University Place Executive Conference Center and Hotel, Indianapolis.
- May 4-6** - Annual Meeting of the Indiana Chapter, American College of Surgeons, Evansville, Ind.

For further information on these CME programs, call Melody Dian, assistant director, CME, (317) 274-8353. □

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The Lambert-Eaton Myasthenic Syndrome



Robert M. Pascuzzi, M.D.
Indianapolis

The Lambert-Eaton Myasthenic Syndrome (LES) is a disorder of neuromuscular transmission that results in subacute or chronic weakness predominantly involving proximal extremity muscles. The disease is considered rare, has been reported four to five times more often in men than in women, and the majority of patients are older, over age 40, although it has been reported in children. Symptoms are usually referable to proximal lower extremity muscles with subjective weakness and fatigue, particularly with walking, climbing stairs or rising from a chair. Proximal myalgias of the back and legs are reported occasionally. Weakness may fluctuate and improve somewhat with repeated exercise. Involvement of cranial muscles may occur but is usually mild in contrast to the clinical involvement in myasthenia gravis. Respiratory muscles are not commonly involved. Myalgias, paresthesias of the extremities, dry mouth, metallic taste and impotence are occasionally reported.^{1,5} Hypoactive muscle stretch reflexes are characteristic.

The myasthenic syndrome has a strong association with malignancy in that two-thirds of reported cases possess some type of underlying neoplasm, most often

small cell or oat cell carcinoma of the lung. Almost all patients with malignancy are over the age of 40.

Cases involving younger patients, who more often are women, are usually unrelated to neoplasm. Patients may initially present with weakness only to have their underlying malignancy detected within two years of onset of LES.¹³

Pathogenesis

The pathogenesis of the disease appears to involve a component of the humoral immune system that impairs the release of acetylcholine from motor nerve terminals. The evidence for an autoimmune pathogenesis is summarized below.

LES has been associated with other autoimmune diseases.^{2,3} Treatment of the underlying carcinoma has been associated with clinical improvement. Immunosuppressive therapies, including corticosteroids, azathioprine and plasmapheresis, have proven effective in the management of the disease.⁵ LES has been passively transferred in several laboratories by administering plasma from affected patients to laboratory mice with the production of characteristic in vitro electrophysiological abnormalities of LES.^{4,8}

The passively transferred factor is probably an immunoglobulin since purified IgG from patients with the disease produces the identical electrophysiological

INDIANA MEDICINE offers its readers a Continuing Medical Education series of articles prepared by the faculty of the Indiana University School of Medicine. The program is coordinated and supported by a grant from the school's Division of Continuing Medical Education.

The I.U. School of Medicine designates this CME activity for one credit hour in Category I of the Physician's Recognition Award of the American Medical Association.

To obtain Category I credit for this month's article, complete the quiz following this article.

The author is assistant professor of neurology at Indiana University School of Medicine and chief of the neurology section at Wishard Memorial Hospital, Regenstrief Health Center, 1001 W. 10th St., Indianapolis, IN 46202.

changes in mice.⁶ Morphological studies of the neuromuscular junction demonstrate disorganization and simplification of the active zone sites of the presynaptic nerve terminal.⁷ Compelling evidence suggests that circulating IgG binds to some portion of the presynaptic motor nerve terminal, thereby interfering with presynaptic release of vesicles of acetylcholine neurotransmitter. The binding site appears to be the voltage dependent calcium channels or a nearby antigen at the nerve terminal.^{9,10} The anticholinergic autonomic symptoms (dry mouth, impotence, etc.) are presumably due to these antibodies binding to muscarinic nerve terminals. These antibody assays are currently investigational tools but eventually should become available to the clinician as a confirming diagnostic test.

Neuromuscular transmission

The clinical hallmark of disorders of the neuromuscular junction is the fluctuating or "fatigable" quality of weakness. The mechanism for fluctuation, basis for electrodiagnosis and rationale for treatment can be understood by analyzing the normal dynamics of neuromuscular transmission.

The motor nerve terminal contains synaptic vesicles in large numbers. Each vesicle contains one quantum of the neurotransmitter acetylcholine (ACh) equal to about 10,000 ACh molecules. ACh is released from vesicles by exocytosis, which occurs at specialized active zones on the nerve terminal (release sites). Nicotinic ACh receptors are located on the crests of the synaptic folds located across the cleft from the release sites (Figure 1).

Spontaneous random release of

quanta results in small depolarizations of the muscle fiber membrane called miniature endplate potentials (MEPPs). MEPPs normally produce a 1 millivolt (mV) depolarization at the muscle fiber endplate, too small to produce a muscle action potential. ACh is then hydrolyzed by acetylcholinesterase, after which choline is taken back up into the nerve terminal for the resynthesis of ACh.

Normally, when a nerve action potential reaches the nerve terminal there is simultaneous release of many quanta (40 to 150 vesicles). This release is mediated by opening of voltage-sensitive calcium channels causing influx of calcium at the nerve terminal. Depolarization of the muscle fiber membrane from this bolus of ACh is the endplate potential (EPP). The resting membrane potential is

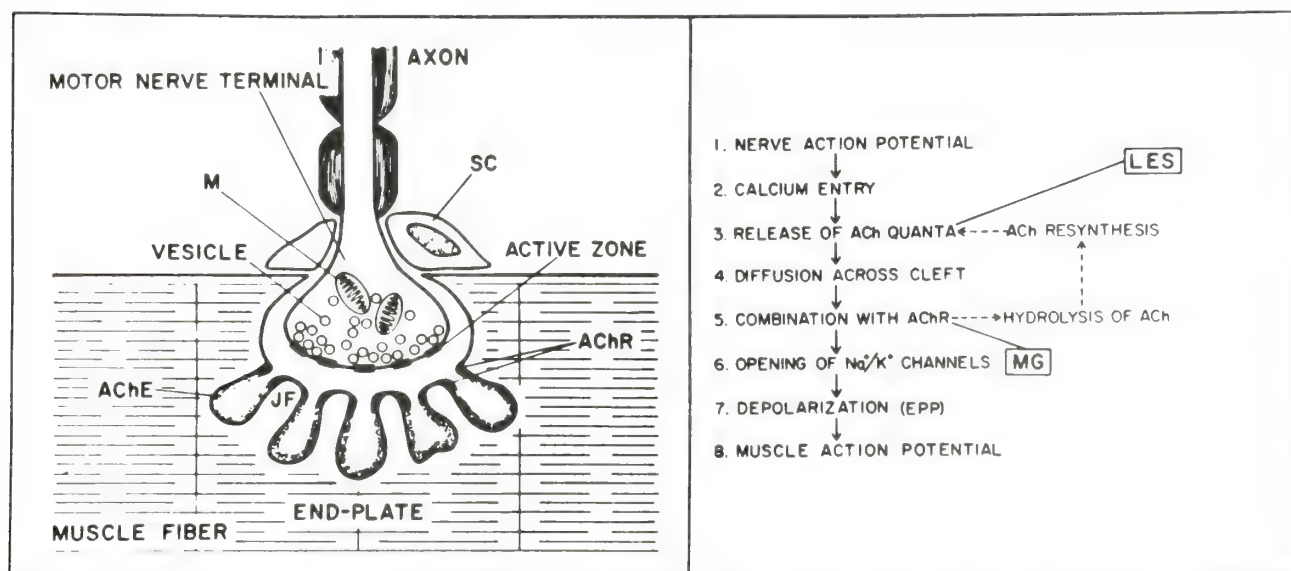


Figure 1: Schematic of the neuromuscular junction, summary of pre- and post-synaptic events in neuromuscular transmission with location of clinical disorders. ACh: acetylcholine; AChE: acetylcholinesterase; AChR: acetylcholine receptor; LES: Lambert-Eaton Syndrome; EPP: endplate potential; JF: junctional fold; M: mitochondria; MG: myasthenia gravis; SC: schwann cell. (Adapted with permission from Yong I. Kim, Ph.D., *Seminars in Neurology*, Vol. 2, No. 3, 1982.)

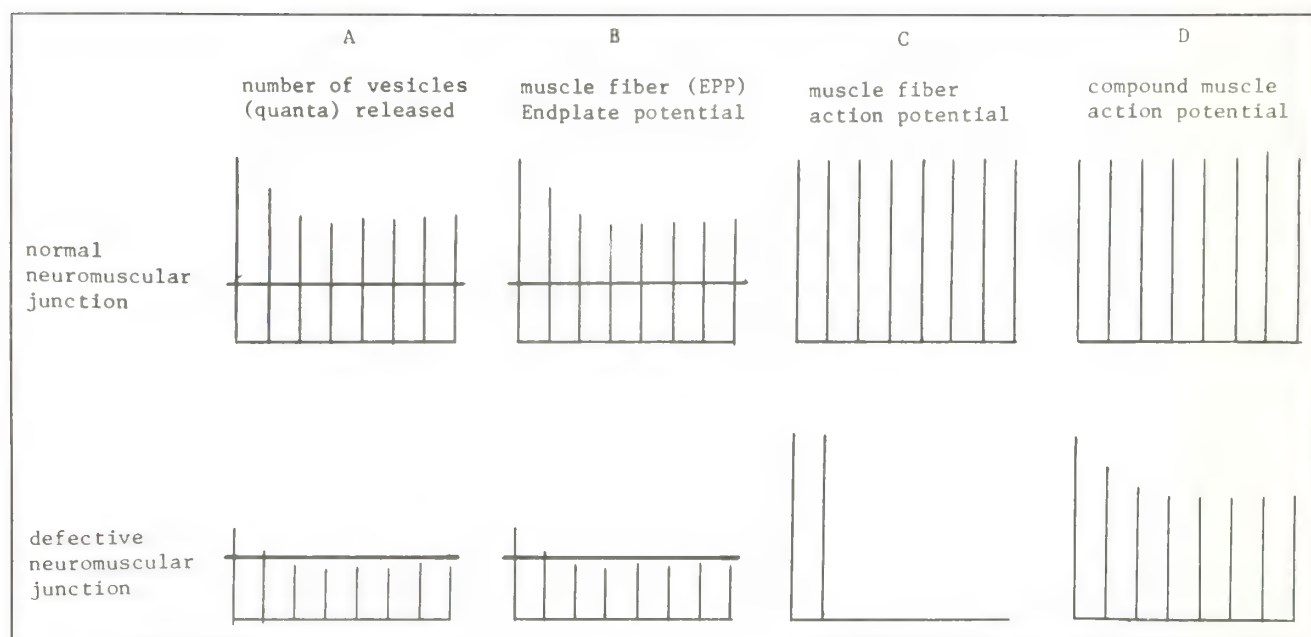


Figure 2: Schematic of the dynamics of neuromuscular transmission. Lines represent responses to repetitive nerve stimulation at 2 per second. A demonstrates the reduced number of quanta released at the nerve terminal. B illustrates corresponding effect on the amplitude of the post-synaptic endplate potential (EPP). C shows that each EPP is sufficient to reach threshold to produce a muscle fiber action potential (AP) in the normal state. In the diseased state some of the EPP are sub-threshold and no AP is generated (transmission is "blocked"). D shows the reduction in size of the compound muscle AP (the sum of all the muscle fiber AP's in one muscle group) in the diseased state due to progressive decline in the number of muscle fiber AP's produced by each successive nerve stimulation.

about -85 mV, and depolarization of 15 to 20 mV must occur in order to reach the threshold necessary to produce a muscle fiber action potential. Therefore, if 100 quanta are released by a nerve action potential and each quantum can produce a 1 mV depolarization, then the resulting EPP will be four to five times greater than that required for reaching threshold and producing a muscle fiber action potential. The excess depolarization is the safety margin that allows neuromuscular transmission to occur even if the nerve terminal becomes depleted of quanta. The muscle fiber action potential is propagated away from the endplate through the trans-

verse tubule system, resulting in calcium release from the sarcoplasmic reticulum and thus mechanical contraction.

The dynamics of neuromuscular transmission are summarized as follows (Figure 2):

- 1) The nerve terminal has about 200,000 quanta of ACh.

- 2) Only about 1,000 quanta are available for immediate release (the releasable store).

- 3) The number of quanta released with a nerve action potential is from 40 to 150 depending on the size of the releasable store and the probability of release. Increasing either of these two factors will increase the number of quanta released and, therefore,

produce a larger EPP.

- 4) Following release with resulting EPP, the releasable store is diminished.

- 5) The releasable store is then replenished by mobilization of other quanta at the nerve terminal. Mobilization requires several seconds to occur (nerve stimuli at 2 per second will result in a progressive decline of the EPP over the first three to five stimuli, but thereafter, the EPP may increase due to the mobilization of quanta).

- 6) The early decline of the EPP in response to a slow train of stimuli is therefore a normal event. The large safety margin normally present prevents any

failure of muscle fiber action potential production. In disorders of neuromuscular transmission in which the EPP is small initially, a further decline in EPP during a train of stimuli may cause the EPP to fall below the threshold necessary to produce a muscle action fiber potential (neuromuscular transmission fails).

7) With exercise (either voluntary contraction or electrically induced tetanus from high frequency nerve stimulation) mobilization of quanta occurs and continues for several seconds after exercise stops, such that the releasable store may become "over-filled." Additional nerve stimuli at that time produce increased quantal release and increased size of the EPP.

8) Calcium accumulation at the release sites increases quantal release. This effect of calcium accumulation lasts about 200 milliseconds, while the effect of mobilization lasts several seconds. Both phenomena contribute to facilitation of the EPP, which occurs with exercise or tetanic nerve stimulation.

9) A brief period of facilitation is followed by a decline in the EPP, reaching its low point 2 to 4 minutes after exercise. In patients with junctional disease this is post-activation exhaustion, which is associated with further decrease in neuromuscular transmission and clinical fatigability.

10) At high rates of nerve stimulation (20 to 50 per second), mobilization, facilitation and depletion also take place. Normally there is a rapid decline in the EPP. When the EPP is initially small due to a presynaptic disorder (LES, botulism), high stimulation rates result in sustained increase in calcium concentration at the nerve terminal, leading to increased quantal release, increased size of the EPP and improved neuromuscular transmission.

Electrical diagnostic testing for junctional diseases is based on the factors described above. With repetitive stimulation the rate should be low, 2 to 3 per second, because frequencies slower than 2 per second may allow time for the releasable store to refill, while frequencies faster than 5 per sec-

ond allow for calcium accumulation at release sites. At 2 per second, calcium has time to diffuse away, but the releasable store does not have time to refill. Therefore, 2 to 3 Hz is the most likely rate to demonstrate a decrementing series of muscle action potentials (the electric hallmark of disease of the neuromuscular junction).

These principles of normal neuromuscular transmission provide the explanation for the fluctuation in power and fatigable weakness so characteristic of LES and other disorders of neuromuscular transmission.

The present method of validation of the diagnosis involves electromyography. LES has a very characteristic and relatively specific electrophysiological appearance (*Figure 3*). There is significant reduction in the amplitude of the compound muscle action potential in all patients. With low rates of repetitive stimulation (2 to 3 Hz), there is a characteristic decremental response. Following muscle exercise there is marked enhancement or facilitation

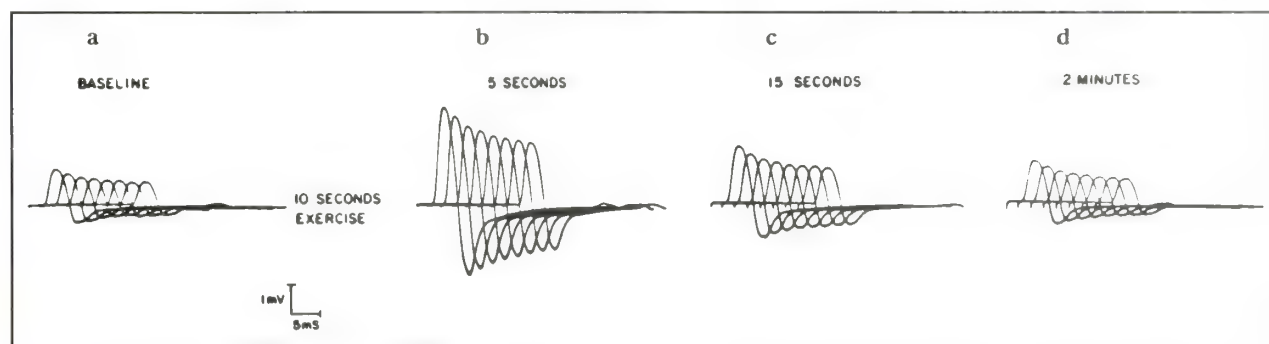


Figure 3: Classic LES abnormalities with 2Hz stimulation of the peripheral nerve while recording the compound muscle action potential from the muscle. Initially, there is a low amplitude response with progressive decline with serial shocks (A). Following brief exercise, there is marked facilitation of the response (due to mobilization of quanta and accumulation of calcium at the nerve terminal) (B). Two minutes following exercise, the response returns to baseline (D). (Reproduced with permission from Lawrence H. Phillips II, M.D., *Seminars in Neurology*, Vol. 2, No. 3, 1982.)

tion of the compound muscle action potential, usually at least double the baseline amplitude. Also, at rapid rates of repetitive stimulation (10 to 50 Hz), there is usually an increment in the evoked compound muscle action potential. These electrophysiologic findings are characteristic of a presynaptic defect of neuromuscular transmission. The low amplitude compound muscle action potentials and the degree of post-exercise facilitation distinguish this from the more common postsynaptic disorder myasthenia gravis.¹¹

Other pre-synaptic disorders to be distinguished from LES include botulism and hypermagnesemia, which tend to involve more acute clinical presentations. The most sensitive in vitro electrophysiological test is single fiber electromyography (SFEMG), which allows measurement of action potentials from single muscle fibers. With proper placement of the recording electrode, one can simultaneously record from two nearby muscle fibers belonging to the same motor unit (innervation by the same anterior horn cell). By measuring the relative variation between the individual muscle fiber action potentials (jitter), which presumably reflects subtle variation in the rise time of the muscle fiber action potentials, one can obtain a sensitive measure of neuromuscular transmission. Increased jitter may be measurable even when the defect of neuromuscular transmission is insufficient to produce clinical weakness. This allows for detection of subclinical abnormalities of neuromuscular transmission.

The incidence of LES is unknown. Utilizing data from the Mayo Clinic, Lambert indirectly

Table 1	
Symptoms:	
<ul style="list-style-type: none"> • proximal limb weakness • "fatigue" or fluctuation of symptoms • difficulty arising from sitting position • reduced walking, climbing stairs • dry mouth, metallic taste, anticholinergic symptoms 	
Signs:	
<ul style="list-style-type: none"> • proximal limb weakness (legs more than arms) • reduced muscle stretch reflexes • transient improvement in muscle power following exercise 	

estimated that LES occurred in about 6% of patients with small cell carcinoma of the lung. Torbergson *et al* reported five of 12 patients with carcinoma of the lung having subclinical single fiber EMG abnormalities, raising the question of more frequent occurrence than previous wisdom.¹² Most neuromuscular clinics see one patient with LES for every 100 with myasthenia gravis.

Therapy

The course of the disorder tends to be chronic with only occasional complete remission. Some patients have improved after successful treatment for their underlying malignancy. Most patients require long-term medical therapy in order to maintain optimal function. In patients over age 40 who have an associated neoplasm, first line therapy is removal of the malignancy. Specific medical therapy involves two basic approaches - symptomatic enhancement of neuromuscular transmission and immunosuppression.

The simplest method of boost-

ing neuromuscular transmission involves use of pyridostigmine (Mestinon), which allows accumulation of ACh at the neuromuscular junction by inhibiting acetylcholinesterase. Guanidine increases the number of quanta released by increasing the duration of the action potential at the motor nerve terminal. Bone marrow, renal and hepatic toxicity have greatly limited its use. A quaternary ammonium compound, 4-aminopyridine, increases quantal release by blocking voltage-dependent potassium conductance. This prolongs depolarization at the nerve terminal and enhances voltage-dependent calcium influx. Central nervous system toxicity including seizures, agitation and confusion limits its use. A less toxic derivative, 3, 4-diaminopyridine, which gains access to the central nervous system poorly, appears to be well-tolerated but currently has limited availability.

Chronic immunosuppression has resulted in the most satisfactory long-term control of symp-

Table 2

**Disorders of
neuromuscular
transmission**

Pre-synaptic:

- Lambert-Eaton Myasthenic Syndrome
- botulism
- hypermagnesemia
- tick paralysis

Post-synaptic:

- myasthenia gravis

Table 3

Therapy of Lambert-Eaton Syndrome

- 1) Removal of associated neoplasm
- 2) "Symptomatic" boost of neuromuscular transmission
 - cholinesterase inhibitors (Mestinon)
 - guanidine (toxicity)
 - 4-aminopyridine (toxicity)
 - 3, 4-diaminopyridine
- 3) Immunosuppressive therapy
 - high dose, long-term corticosteroids
 - azathioprine
 - plasmapheresis

toms. Corticosteroids, azathioprine and plasmapheresis have all shown benefit.

Although LES should be of particular interest to neurologists, oncologists and rheumatologists, the diagnosis should be considered in the differential of any patient with proximal weakness and/or fatigue. □

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■ cme quiz

To obtain one hour of Category I CME credit, answer the following questions by circling the correct answer on the answer sheet below. Complete the application form and mail it to: Indiana University School of Medicine, CME Division, BR 156, 1226 W. Michigan St., Indianapolis, IN 46223.

Lambert-Eaton Syndrome

- The Lambert-Eaton Myasthenic Syndrome is
 - a disorder of the post-synaptic portion of the neuromuscular junction interfering with the ACh receptor.
 - a disorder of the pre-synaptic portion of the neuromuscular junction interfering with the release of ACh.
 - a disorder of defective acetylcholinesterase.
- Which of the following are major concepts involving LES?
 - the presence of an associated neoplasm (most often small cell, oat cell) carcinoma of the lung.
 - autoimmune phenomenon with IgG directed against the pre-synaptic nerve terminal.
 - both of the above.
- Common clinical symptoms in LES include
 - proximal weakness.
 - "fatigue" or fluctuation in power.
 - anticholinergic symptoms including dry mouth.
 - all of the above.
- The pathogenesis of LES probably involves
 - lymphocytic infiltration of muscle.
 - antibodies (IgG) that bind to the voltage dependent calcium channels at the pre-synaptic cholinergic nerve terminal.
 - tumor infiltration into muscle.
- Fluctuation in muscle power occurs in disorders of the neuromuscular junction because of
 - minute to minute variation in levels of antibodies.
 - toxic metabolites of exercised muscle fibers.
 - the normal dynamics of ACh release, mobilization and depletion at the motor nerve terminal superimposed on reduction in efficiency of neuromuscular transmission.
- Which one of the following is not a disorder of the neuromuscular junction?
 - myasthenia gravis.
 - Lambert-Eaton syndrome.
 - botulism.
 - hypermagnesemia.
 - polymyositis.
- Established therapies of LES include
 - removal of associated neoplasm.
 - cholinesterase inhibitors (Mestinon).
 - immunosuppressive therapy (corticosteroids, azathioprine, plasmapheresis).
 - all of the above.
- Normally, there is a reduction in release of ACh from the motor nerve terminal with exercise or repetitive nerve stimulation. Why do normal individuals not experience weakness due to this reduction?
 - the endplate potential (EPP) is normally so much greater than the threshold necessary for production of a muscle fiber action potential (the "safety margin" for neuromuscular transmission is too great).
 - compensatory increase in acetylcholinesterase.
 - none of the above.
- Botulinum toxin produces paralysis by affecting
 - pre-synaptic nerve terminal.
 - post-synaptic ACh receptor.
 - muscle fiber.
 - anterior horn cell.
- Myasthenia gravis causes weakness by affecting
 - pre-synaptic nerve terminal.
 - post-synaptic ACh receptor.
 - muscle fiber.
 - anterior horn cell.

Answer sheet for CME quiz

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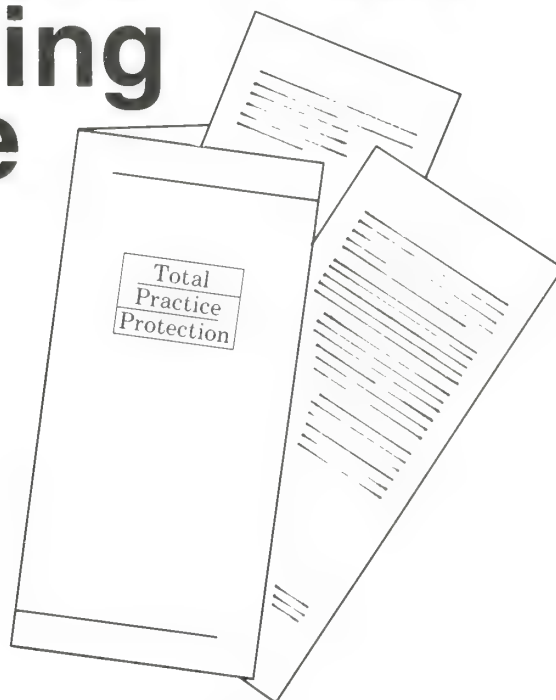
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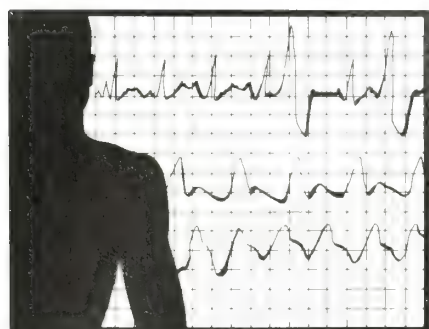
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Evaluation of thyroid function in the critically ill



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The patient admitted to the intensive care unit frequently presents unexpectedly with poorly defined pathophysiologic processes affecting multiple organ systems. Differential diagnosis in such a patient is a complicated and frustrating process, especially when immediate therapeutic interventions are required. Because of the multi-system character of these patients' disorders, endocrine dysfunction frequently must be considered during the acute evaluation.

This is particularly true of disorders of thyroid function. At the extremes of thyroid disease, myxedema coma and thyroid storm are life-threatening disorders, which of themselves necessitate critical care interventions. More subtly, mild or moderate hyper- or hypothyroidism may alter the response to other intercurrent life-threatening diseases, such as sepsis or myocardial infarction. Finally, the typical changes in thyroid function tests seen with severe illness may result in the misdiagnosis of thyroid disease in the presence of normal thyroid function. While the definitive treatment of thyroid disease usually requires the aid of an endocrinologist, all physicians providing medical care in the in-

tensive care unit need to be familiar with the initial tests that may be used to screen for thyroid dysfunction in the critically ill.

During severe illness, while function of the hypothalamic-pituitary thyroid axis remains intact, there are changes in the peripheral metabolism and protein binding of levothyroxine (T_4). The concentration of unbound, physiologically active T_4 (free T_4 or FT_4) remains normal. However, because of decreased production of carrier proteins (thyroid binding globulin, albumin, thyroid binding prealbumin) and possibly poorly characterized competitive binding inhibitors, the component of total T_4 bound to protein is decreased, resulting in proportional decrease in the total serum T_4 measured by most commercially available assays.¹ At the same time, as part of the normal response to severe systemic stress and/or malnutrition, there is decreased conversion of T_4 to metabolically active triiodothyronine, or T_3 , and increased conversion to inactive reverse T_3 (rT_3).² If only T_3 and T_4 are determined, the physiologically euthyroid patient with systemic disease may appear hypothyroid. This "sick euthyroid" condition complicates the evaluation of thyroid function in the intensive care unit and necessitates additional tests.

The most readily available tests to rule out hypothyroidism in the sick euthyroid patient are the free

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thyroxine index (FTI) and the serum thyroid stimulating hormone (TSH). Because the hypothalamic pituitary thyroid axis remains intact, a normal TSH will effectively rule out primary hypothyroidism. T_3 resin uptake (T_3 RU) is inversely proportional to the number of T_4 binding sites present on serum proteins. Due to decreased production of carrier proteins, the T_3 RU is frequently increased in the sick euthyroid state. The FTI, which is product of the total T_4 and the T_3 RU, may be used as an indirect measure of FT_4 and is usually normal or even increased in the critically ill patient with normal thyroid function. FT_4 may also be measured directly, although commercial assays are not widely available now. In summary, the typical results of thyroid function testing in the critically ill will include decreased total T_3 and T_4 , normal TSH, and normal or increased FT_4 , FTI and T_3 RU.²

Hypothyroidism is the thyroid disorder most commonly mimicked by other life-threatening disease processes. The respiratory failure, decreased mental status, arrhythmias, hyponatremia, ileus and anemia that occur in severe hypothyroidism are all common abnormalities in the intensive care unit patient. Because of this, the critical care physician needs to approach these patients with a mixture of clinical suspicion and diagnostic skepticism. Fortunately, even in the euthyroid sick state, a normal serum TSH will rule out primary hypothyroidism, and secondary hypothyroidism is responsible for fewer than 5% of hypothyroid patients. Secondary hypothyroidism occurs most commonly as the result of a global pituitary destructive process; thus,

in the absence of clinical findings suggesting panhypopituitarism, a normal TSH should suffice to rule out hypothyroidism. If secondary hypothyroidism is suspected, evaluation of the hypothalamic pituitary axis by thyroid releasing hormone (TRH) stimulation may be performed.³ A normal increase in TSH in response to TRH stimulation will rule out secondary hypothyroidism in the absence of a primary hypothalamic lesion. Such tertiary hypothyroidism is very rare, occurring in less than 1% of hypothyroid patients.²

***Hypothyroidism is
the thyroid disorder
most commonly
mimicked by other
life-threatening
disease processes.***

If myxedema coma is strongly suspected as the primary disorder resulting in a life threatening illness, then immediate therapy with high doses (400 to 500 mcg) of intravenous synthroid (T_4) may be indicated, even prior to receiving the results of thyroid function tests. This can be followed by a maintenance dose of 50-100 mcg IV daily. Ideally, this form of aggressive treatment should be instituted with the help of an endocrinologic consultation. If less severe hypothyroidism is suspected to be complicating intercurrent critical illness, it may be more appropriate to wait for the results of laboratory testing. However, it is probably safe to initiate low dose maintenance

therapy with synthroid, at 50-100 mcg per day. Since synthroid is the relatively inactive "pro-hormone" T_4 , misdiagnosis and treatment will rarely result in significant hyperthyroidism over a short period of time, since peripheral conversion to T_3 will be limited.

Polyglandular autoimmune syndromes, panhypopituitarism, and transient hypothyroid-induced adrenal insufficiency may all result in adrenal failure in the patient with thyroid insufficiency. Because of the frequent coexistence of hypothyroidism and adrenal failure, consideration should be given to hydrocortisone supplementation during the initial treatment of suspected hypothyroidism in critically ill patients. If this is begun, it should be continued until adrenal insufficiency can be excluded.⁴

At the other extreme, severe hyperthyroidism or thyroid storm may also be confused with other life-threatening disorders. The delirium, tachyarrhythmias, hyperdynamic circulation and hyperpyrexia characteristic of thyroid storm not only resemble systemic infection or delirium tremens; thyroid storm may be precipitated by systemic stress in patients with less severe hyperthyroidism. Other events that may precipitate thyroid storm include anesthesia, diabetic ketoacidosis and the administration of radiographic contrast agents.

Fortunately, in the critically ill the physical findings and laboratory diagnosis of severe hyperthyroidism are somewhat more straightforward than those of hypothyroidism. If T_3 and/or T_4 are elevated, hyperthyroidism is present. Difficulty arises when normal or high normal T_3 and T_4

levels are discovered in the patient who is suspected of hyperthyroidism and who is ill enough from an intercurrent disease that sick euthyroid state would be expected. The question then remains as to whether the thyroid hormone levels are appropriately low enough for the patient's degree of systemic illness. In this situation, evaluation of the TSH response to TRH is useful in establishing or ruling out the diagnosis of hyperthyroidism. The normal two- to six-fold increase in TSH is severely blunted in hyperthyroidism, while it is usually maintained in the sick euthyroid state. A blunted response to TRH stimulation is also seen in secondary hypothyroidism,³ but clinical presentations of the two disorders are different enough to make con-

fusion unlikely.

Thyroid storm is a medical emergency requiring rapid treatment, and endocrine consultation is essential. Initial treatment includes supportive therapy, suppression of thyroid hormone synthesis and release with thionamides (methimazole or propylthiouracil), blockage of catecholamine activity with nonspecific beta blocking agents such as propranolol, and inhibition of the peripheral conversion of T_3 to T_4 . The latter can be achieved with propylthiouracil, propranolol and glucocorticoids.⁴

It is possible that abnormalities in thyroid function may play a role in the presentation of patients with complicated multi-system disorders. A high index of clinical suspicion and appropriate use of

the laboratory make it possible for the physician in the intensive care unit to initiate the evaluation of these patients and obtain appropriate endocrinologic consultation if thyroid function is abnormal. □

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Therapy-related adverse reactions are uncommon. Those reported include:

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- Symptoms of pseudomembranous colitis may appear either during or after antibiotic treatment.
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- Cases of anaphylaxis have been reported, half of which have occurred in patients with a history of penicillin allergy.
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 - Rarely, reversible hyperactivity, nervousness, insomnia, confusion, hypertonía, dizziness, and somnolence have been reported.
 - Other: eosinophilia, 2%; genital pruritus or vaginitis, less than 1%; and, rarely, thrombocytopenia.
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Drug Interactions: Animal studies have shown that simultaneous administration of CARAFATE (sucralfate) with tetracycline, phenytoin, digoxin, or cimetidine will result in a statistically significant reduction in the bioavailability of these agents. The bioavailability of these agents may be restored simply by separating the administration of these agents from that of CARAFATE by two hours. This interaction appears to be nonsystemic in origin, presumably resulting from these agents being bound by CARAFATE in the gastrointestinal tract. The clinical significance of these animal studies is yet to be defined. However, because of the potential of CARAFATE to alter the absorption of some drugs from the gastrointestinal tract, the separate administration of CARAFATE from that of other agents should be considered when alterations in bioavailability are felt to be critical for concomitantly administered drugs.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Chronic oral toxicity studies of 24 months' duration were conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). There was no evidence of drug-related tumorigenicity. A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies were not conducted.

Pregnancy: Teratogenic effects. Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients treated with sucralfate, adverse effects were reported in 121 (4.7%).

Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

OVERDOSAGE

There is no experience in humans with overdosage. Acute oral toxicity studies in animals, however, using doses up to 12 gm/kg body weight, could not find a lethal dose. Risks associated with overdosage should, therefore, be minimal.

DOSAGE AND ADMINISTRATION

The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

While healing with sucralfate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination.

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Reference:

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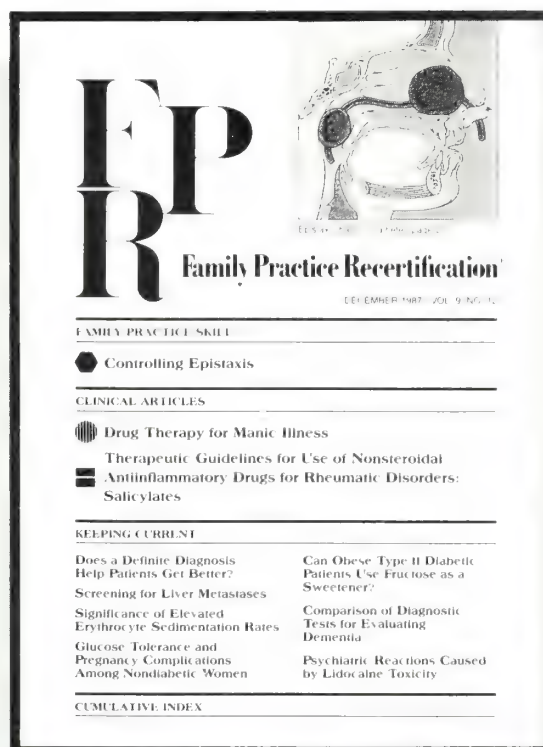
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Radiology Clinic:

Pulsatile neck mass

James D. Lutz, M.D.
James Bognanno, M.D.
Richard Smith, M.D.
Henry Jones, M.D., Ph.D.
Indianapolis

The patient is a 44-year-old nonsmoker who presented to his local primary physician because of the appearance of a mass on the left side of the neck over the past

few months. He was otherwise healthy and asymptomatic, without dysphagia or hoarseness.

Physical examination revealed a pulsatile mass anterior to the sternocleidomastoid, 3 cm below the angle of the mandible. The remainder of the ears, nose and throat examination was unremarkable. Neurological examination revealed cranial nerves to be intact. His cardiovascular examina-

tion was unremarkable and vital signs were normal.

The patient was referred to Indiana University Medical Center for diagnostic angiography. Two images are presented from a selective left carotid intrarterial digital subtraction angiogram in the lateral projection. The first is an early arterial phase and the second a later arterial phase.

What is your diagnosis?



Figure 1: Early arterial phase of a left carotid injection.



Figure 2: Later arterial phase of left carotid injection.

Diagnosis

Carotid body paraganglioma (chemodectoma) is the diagnosis.

Findings

A hypervascular mass is splaying the bifurcation of the internal and external carotid arteries and displacing it in an anterolateral direction. There is an intense capillary blush without any evidence of early draining veins.

Discussion

Carotid body tumors are generally benign, nonsecretory rests of neural crest origin. Histologically, these neoplasms may be classified as members of the Amine Precursor Uptake and Decarboxylation (APUD) system. Paragangliomas also occur in various other sites in the head and neck. The most common of these include glomus jugulare and glomus tympanicum.

Carotid body tumors frequently present in the fifth decade with no sex predominance. There is evidence of a familial pattern of involvement in 30% of cases. Ten percent of sporadic cases will also exhibit multicentric disease, such as an associated contralateral glomus jugulare tumor.

Chemodectomas are typically asymptomatic and present as painless, pulsatile neck masses found incidentally on physical examination. Occasionally they may cause symptoms by local invasion, tumor bulk compromis-

ing the pharyngeal space, or by secreting catecholamines. Hypertensive crisis has been reported to occur during physical examination, angiography and surgery. Local invasion of carotid body tumors rarely causes cranial nerve deficits; the XII nerve and the superior laryngeal nerve are most commonly affected, leading to hoarseness, dysphagia or ipsilateral tongue fasciculations. Horner's syndrome and stroke are rare consequences. Glomus tumors are more likely to cause cranial nerve deficits than carotid body tumors, with potential involvement of the VIII, IX, X, XI and XII nerves. Malignant transformation is estimated to occur in up to 15% of carotid paragangliomas. The malignant nature of the tumor is difficult to determine pathologically, and metastasis and lymph node involvement are the only reliable indicators.

Differential diagnosis of a cervical neck mass includes lymphadenopathy, brachial cleft cysts, neurogenic tumors, aneurysms, bulbar ectasia of the internal carotid artery (dolicocarotid artery) and metastasis. Diagnostic selective intrarterial digital subtraction angiography (IADSA) is the procedure of choice for evaluating these tumors. Thin section CT through the temporal bones and neck using intravenous contrast may be utilized in staging for multiplicity and local invasion.

IADSA also provides preoperative evaluation of the tumors' blood supply, the most common arterial supply being from the ascending pharyngeal branch of the external carotid artery.

Therapy requires a multidisciplinary approach. Consultation among the patient, the primary service, the radiologist and the surgeon is essential. Carotid body tumors are not radiosensitive and attempt at surgical removal is necessary because of the malignant potential and tendency for local invasion. Adjunctive embolization before surgery may allow easier resection or render a previously inoperable lesion operable. In occasional cases embolization alone may be curative. □

From the Department of Radiology at the Indiana University Medical Center, Indianapolis, Ind.

Section Editor: Robert D. Tarver, M.D., Director of Chest Imaging, Wishard Memorial Hospital, Indianapolis, Ind.

Suggested readings

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Cancer pain syndromes

Wayne O. Evans, Ph.D.
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Editor's Note: This is the second in a monthly series of six articles about cancer pain.

Pain in patients with cancer includes 75% of patients whose pain is directly related to the infiltration of the tumor, and 25% will have pain due to cancer therapies and 10% may have pain from sources not directly related to the cancer.¹ This latter category includes disorders such as herpetic neuralgias that are due to the suppression of the immune system by therapies. Furthermore, since cancer is a disease that increases in likelihood as people grow older, the various pain syndromes of the elderly often will be present.

Pain directly related to the cancer

Pain Due to Bone Involvement - Pain receptors can be found within the bone itself, in association with the joints and with the vascular structures of bone. Bony involvement may come from primary, plasmocytomas or metastases from primary tumors in other areas, particularly from breast, prostate, lung, kidney or thyroid.²

Bone cancer also may act by releasing prostaglandins that sensitize pain receptors of muscles, joints and tendons that surround the area.

Tumors directly involve bone in

both osteolytic and osteoclastic processes. They also may act by compression of adjacent nerves, muscles or blood vessels.³ Radiation often is palliative in bone cancer.

Headache is the common feature to metastases to the skull. It is usually the first symptom that will present. It may precede neurological signs and symptoms by weeks or months. Generally, a computed tomography (CT) scan or magnetic resonance imaging (MRI) will be required to document the tumor infiltration of skull bone. Jugular foramen syndrome, sphenoid sinus or clivus metastases and fracture of the odontoid process may occur to cause the pain.⁴ A neurological examination will be necessary to determine the functional status of the cranial nerves. The signs and symptoms will vary depending on which cranial nerves are involved. Symptoms may include dysarthria, neck and shoulder weakness, ptosis, hoarseness and dysphagia. The presence of Horner's syndrome suggests involvement of the sympathetic nervous system. If severe neck pain and stiffness also are present, the pain may be the result of the pathologic fracture or subluxation of the spine with the result of compression of the brain stem and spinal cord. Neck manipulation in these patients is dangerous.

Tumor infiltration of the vertebral bodies is the most common pain syndrome in cancer patients. Radicular pain is the hallmark of nerve root compression. The pain

is felt as deep in muscles supplied by the compressed nerve and follows the cutaneous distribution of its dermatome. The patient is usually in the least pain when the nerve is not being stretched or compressed.

Funicular pain due to spinal cord compression is more diffuse and less sharp than radicular pain. It is often described as a cold, unpleasant sensation in the extremity. The earliest sign of spinal cord compression is tenderness of the vertebral body upon percussion over the area of compression.⁵ It will require a CT scan, MRI and/or myelogram to accurately diagnose.

In both root and cord compression, pain activities that increase intraspinal pressure, such as coughing, sneezing or straining, or movements that stretch the compressed structure, such as a straight leg raise, will cause an exacerbation of the pain.

Pain with its origins in the cervical or thoracic spine often will be felt as an ache radiating into the shoulders. Radicular pain may be experienced in the arm, elbow and hand. Pain may also be experienced as an intercostal neuralgia. However, intercostal pain more often is due to liver metastases. Occasionally, involvement of the thoracic spine will present as a referred pain to the abdomen.

Involvement of the lumbar spine due to spinal cord or nerve root compression resembles the pain of a disc herniation or other pain problems of nonmalignant

origin. The pain is often dull and exacerbated by lying down whereas standing up helps the pain. This is the opposite of the usual pain found with disc herniation.

Metastases to the sacrum usually occurs with colonic, genitourinary and gynecological cancers. It is characterized by dull pain in the low back or coccyx.

The identification and treatment of pains associated with pressure on nerve roots or spinal cord, if left unattended, may develop into a paraparesis or paraplegia. In all of these pain syndromes, the primary pain also may lead to a myofascial pain disorder due to the hypertonicity of the skeletal muscles induced by the reflexive response of the body to the pain.

Tumor Infiltration of Nervous Tissues - Headache is not the predominant symptom in most brain tumors. When it does occur, it is often in association with a tumor in the posterior fossa of the cranium.⁶ Occasionally, headache will be associated with meningioma, glioblastoma, medulloblastoma, craniopharyngioma and hypophyseal tumors. Also, tumor infiltration of the leptomeninges may present as a headache with or without a stiff neck or backache.⁷ Findings of the neoplastic cells in the cerebrospinal fluid confirm the diagnosis.

Constant, burning pain is the sign of tumor infiltration or compression of peripheral nerves. Dysesthesia and sensory loss may also be present. Tumor invasion of space occupied by paravertebral, retroperitoneal or intercostal nerves are most common.³ A CT scan will be necessary to document the region of nerve compression. Treatment of this type of

pain may be surgical excision of the tumor body or by the use of tricyclic amine antidepressant and anticonvulsant drugs.

Tumors can invade both the brachial and lumbosacral plexes. Pain is generally the first symptom. The neurological signs are sensory loss and motor paresis. These signs usually develop much later than the pain. Generally, the pain is aching, but in some cases of brachial plexopathy, the pain will be burning with painful paresthesias in the hand or elbow. Many patients will present with signs of autonomic nervous system dysfunction. The CT scan is the most reliable diagnostic technique. A myelogram also may be useful. Treatment for this type of pain includes the use of antitumor modalities that are specific to the type of tumor that is invading the plexus. Unfortunately, the longer the tumor has had to progress, the less the chance of a successful resolution of the pain.

Postradiation pain can develop as late as 20 years after irradiation.

Lumbosacral plexopathy is particularly disappointing since it usually suggests advanced disease.³ The use of analgesic drugs, both narcotic and nonnarcotic, and anesthesiological and neurolytic procedures may be required.

Pain Due to Involvement of Hollow or Parenchymal Viscus - Infiltration of a tumor in or around blood vessels, lymphatics, hollow or solid organs can cause obstruction, distention and ischemia, all

of which can lead to pain.⁷ The pain is generally poorly localized and, as with other visceral pains, often is referred to other parts of the body. The pain is usually diffuse and characterized as aching. The ischemia also will cause the release of algogenic chemicals such as kinins, autochoids and histamine. These chemicals can sensitize nociceptives distant from the primary site of the lesion. Specific antitumor therapies that reduce infiltration or the mass of the tumor will reduce the pain.

Pain due to cancer therapy

Pain may be produced immediately after cancer therapy; for example, radiation esophagitis, postsurgical pain or inflammation of mucosal tissue due to chemotherapy. Pain also may develop months or years after the therapy. This late occurrence of pain can be most distressing in patients in whom the original disease seems to have remitted.

Postradiation pain can develop as late as 20 years after irradiation. Generally, it will occur only if 6,000 R or more have been delivered to the patient.

Radiation myelopathy is characterized by pain at the site of spinal cord damage or may be referred to lower levels.³ It is usually accompanied by contralateral sensory loss and ipsilateral motor paresis. The pain may be managed by the usual methods for treatments of neuropathies. Unfortunately, no specific therapy is known for this condition.

Radiation can induce peripheral nerve tumors. They are characterized by a painful, enlarging mass. Pain and progressive neurological deficiencies result.

Radiation fibrosis can develop

in both the lumbosacral and brachial plexes. These are characterized by pain, lymphodema, numbness, paresthesias and radiation skin changes. CT scans can be useful in diagnosis. Pain may progress, leading to disability and dysfunction associated with the developing sensory and motor deficits. There is no specific, effective therapy for this condition.

Pain can result from chemotherapy.^{8,9} The vinca alkaloids, especially vincristine, can cause a toxic polyneuropathy. Methotrexate, cisplatin, procarbazine, Ara C, misoniadazole and hexamethylmelamine have induced post-chemotherapy neuropathies. The neuropathies are characterized by painful paresthesias and dysesthesias, usually in the hands and feet. The pain is burning and exacerbated by any form of stimulation. Therapy involves discontinuation of the toxic chemical and treatment of the neuropathy with tricyclic amine antidepressants and/or anticonvulsants. The pain will usually resolve slowly over time.

Treatment with corticosteroids can result in pseudorheumatism upon discontinuation.³ It is characterized by diffuse myalgias and arthralgias. Treatment entails reinstitution of the steroids and a very slow withdrawal. Aseptic necrosis of the bone is another complication of steroid therapy. Doses of 10 mg to 90 mg of prednisone per day for as little as six weeks can cause this problem. It is characterized by joint pain exacerbated by movement. Bone scan or MRI can confirm the diagnosis. Symptomatic treatment with analgesics is required.

Surgery can be a source of both acute and chronic pain in cancer patients.³ The acute problem can be dealt with by good postsurgical

pain control.¹⁰ The chronic problems are more difficult to manage.

Amputation can lead to both stump and phantom limb pain. The stump pain develops due to the formation of neuromas at the site of nerve regrowth. It is a burning, dysesthetic pain. Diagnostic nerve blocks with a local anesthetic followed by neurolytic procedures can be useful. Tricyclic amine antidepressants and anticonvulsants may be tried. Prosthesis adjustment also should be considered. Phantom limb pain usually develops if the extremity was painful before amputation. It sometimes resolves over time. It is a difficult pain to treat.

Radical surgery of the head and neck both interrupts nerves with a resulting deafferentation pain and causes muscular imbalance with accompanying postural and nerve entrapment syndromes. Tricyclic amine antidepressants and anticonvulsants are useful for the deafferentation pain. Physical therapy, bracing and trigger point injections help the muscular imbalance. Generally, these patients also will benefit from mild exercise programs that emphasize stretching the muscles. In this situation, as with any pain problem, a myofascial pain syndrome may develop unless the original pain is treated effectively.

Postmastectomy pain results

Radical surgery of the head and neck both interrupts nerves with a resulting deafferentation pain and causes muscular imbalance with accompanying postural and nerve entrapment syndromes.

from the interruption of the intercostobrachial nerve. It is characterized by pain in the posterior arm, axilla and anterior chest wall. The pain is a burning dysesthesia with a sense of constriction. Immobilization eases the pain. Its treatment is the same as for any radical surgical pain.

Postthoracotomy pain results from the damage to the intercostal nerves. It is treated as other postsurgical pain. Intercostal or thoracic nerve blocks may be useful. Recurrence of the tumor must be considered with this type of pain.

There are assorted pain syndromes that are neither directly related to the cancer nor to the cancer therapy, but are more likely to occur in patients with cancer. These include hypercoagulopathies such as embolism, thrombosis, thrombophlebitis and hematoma, pain due to lack of exercise, decubiti from prolonged periods in bed, pain associated with herpetic infection and others. Pain from these sources should be taken seriously and appropriate treatment programs developed for them. □

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■ drug names

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Dosage forms:	Aerosol	Cream, powder, aerosol powder, aerosol liquid, solution
	<u>SLOW-K</u>	<u>SLOW FE</u>
Category:	Potassium supplements	Iron product
Brand name:	Slow-K, CIBA	Slow FE, CIBA Consumer
Generic name:	Potassium chloride	Ferrous sulfate
Dosage forms:	Tablets	Tablets

Benjamin Teplitsky, R. Ph.
Brooklyn, N.Y.

Look-alike and sound-alike drug names can be misinterpreted by a nurse reading doctors' orders or by a pharmacist compounding physicians' prescriptions. Such misunderstandings can result in the administration of a drug not intended by the prescriber. Awareness of such look-alike and sound-alike drug names can reduce potential errors. □

Decision to withhold or withdraw support

Roland B. McGrath, M.D.
Indianapolis

Patient, family and physician decisions to withhold and/or withdraw therapies have become increasingly common. General discussions of this matter are burdened with multiple obstacles such as vague terminologies, emotionally charged ethical issues, identification of decision makers, assurance of informed consent and patient autonomy, establishment of competency, substituted judgment, labile legal precedents, the separation of ethical/moral issues from medical questions and the clinical uncertainties of hopelessness. This paper outlines many of these issues.

Terminology

A vocabulary has evolved to complement discussions regarding decisions about appropriate levels of care. Patient status - death, brain death, persistent vegetative state and terminally ill - cannot be easily defined. Clinical (medical) and societal (legal) descriptions of death can be disparate. Most precedents for choices to withhold or withdraw therapy insist on the patient being "terminally ill." What constitutes a terminal illness? Is it malignancy (some are curable and others are compatible with significant longevity)? Or is it anticipated death (hours, days, weeks, months)?

Once, the terms ordinary and extraordinary treatment modalities were discussed. Quickly it became obvious that something as ordinary as a peripheral venous access for administering pharma-

ceuticals or hydration and nutrition might be extraordinary and therefore unreasonable for selected patients.

Euthanasia, an unaesthetic term with emphasis on the differences of active and passive processes, received attention. Most physicians would now concede that there are few ethical differences between passively withholding and actively withdrawing therapies if decisions have been made properly. That is, if the patient has had the choice to express self-determination and/or his interests have been protected by substituted judgment, passively or actively limiting the extent of care may be acceptable.

Additional issues

Certainly, ethics and science have recurrent conflict. Discussions regarding genetic engineering and abortion are emotion packed and probably will not be resolved soon.

Ethicists will continue to debate who should make decisions about levels of medical care. This issue will be addressed in the following description of legal precedents and models for such decisions.

Informed consent is of arguable value because of perceptions, pre-occupation and denial but does have considerable legal mandate. Competency is moderately well defined and must be considered. The autonomy of a competent patient must be respected and is emphasized in all statements regarding decisions to limit care. The living will or state legislated natural death acts are expressions of self-determination. Substituted judgment has multiple precedents

and is a fundamental component of provision of court appointed guardians and some decisions by proxy.

Finally, the quantitation of morbidity and mortality in selected disorders is not absolute. Known outcomes with and without intervention assumes a diagnosis, but labeling clinical illnesses is not always possible. The many clinical uncertainties make it difficult and burdensome to clearly identify hopeless situations, thus avoiding unnecessary therapies.

Legal precedents

What are the legal precedents for decisions to withhold and/or withdraw therapies? What is the proper role of the court and the parties involved?

Of course, there are multiple court decisions. None, however, have been made in Indiana.

Karen Quinlan was a 22-year-old woman who was unresponsive and apparently ventilator dependent following alleged substance ingestion in 1975. Quinlan's parents objected to the continuation of ventilatory support in a setting where the hope for meaningful existence with response to the environment was unlikely. Their request to discontinue support was in conflict with the primary physician's preparedness to cooperate. The New Jersey Supreme Court made these implications in its 1976 decision: 1) an ethics committee might provide a safeguard in decisions to limit care; 2) the incurable patient has a right to die; 3) the comatose or incompetent subject retains that right to die; and 4) the withdrawal of therapy is not nec-

essarily equivalent to homicide.

Karen Quinlan was removed from the ventilator and died in 1985.

Joseph Saikewics was a mentally retarded 67-year-old who was institutionalized and found to have acute myelomonocytic leukemia. The physician and the institution didn't agree on whether to start chemotherapy. The Massachusetts Supreme Court in 1977 suggested that substituted judgments (decisions on behalf of patients) were the responsibility of the court. Terror swept the New England medical community.

Shirley Dinnerstein was a 67-year-old with Alzheimer's dementia, coronary artery disease, hypertension and cerebrovascular disease. When hospitalized, her children and her physician agreed that resuscitation would not be proper. The hospital administration, however, was not comfortable with the no code alternative. A Massachusetts appellate court in 1978 emphasized that such decisions were peculiarly within the competence of the medical profession. The Saikewics' decision had been attenuated.

Role of the court

The courts may be asked to participate in situations with insufficient legal, social and medical guidance, to resolve conflicts, to confirm legal mandates and to protect other legitimate interests (dependents, state, etc.).

Other postures

The Swiss Academy of Medical Science (1976) and the Canadian Law Reform Report (1983) insist the final responsibility belongs to the physician. In a lengthy report, the president's Commission for the Study of Ethical Problems in

Medicine and Biomedical and Behavioral Research (1983) fails to identify responsibility. The American Medical Association's Council on Ethical and Judicial Affairs (1986) states that the physician's social commitment is to sustain life and relieve suffering, and even if death is not imminent, it is not unethical to withdraw therapy.

***Of course, there
are multiple court
decisions. None,
however, have been
made in Indiana.***

The Joint Commission

The Joint Commission Accreditation Manual for Hospitals (1988) mandates a "hospital-wide policy on the withholding of resuscitation services from patients." Such a policy, they insist, must include: a) the mechanism for reaching decisions, b) mechanisms for resolving conflicts, c) roles of various players in the decision-making process, d) provision for assuring respect for patient's rights, and e) documentation of the decision in the orders and medical record.

Can and should everyone be included in the decision process? Should signed informed consent be a component of affecting these decisions? Are ethics committees to be organized to deal with conflicts?

Wishard policy

Wishard Memorial Hospital, at the Indiana University Medical

Center, has had a no code order policy since November 1980. A group with broad representation wrote this policy after considering the many issues in the preceding discussion. Most of the dialogue centered on the issue of decision makers and who, if anyone, should be obligated to be a participant. The group believed these were medical decisions to be made by physicians. Mandatory consultations with other physicians, family, clergy, administrators and legal counsel were believed to make such a policy unworkable.

The policy simply states: 1) whether it is proper to initiate resuscitation procedures for a specific patient is properly a medical decision; 2) when in the judgment of the attending faculty physician, it is not appropriate to initiate such procedures, this opinion will be expressed as an order in the orders section of the medical records; and 3) the attending faculty physician may, in his or her discretion, accompany the order with an explanatory note or a consultation note.

An addendum in 1984 clarified cardiopulmonary resuscitation: 1) specific emergent resuscitation procedures include intubation, positive pressure ventilation, chest compression, administration of vasopressor drugs, cardioversion and defibrillation; 2) the order to not resuscitate a patient must specify which of these emergency procedures is/are not appropriate; and 3) in the case that all of the emergent procedures are deemed inappropriate, the order should read: "No emergent resuscitation procedures indicated."

Now each of us must agonize over the most recent issues interjected by the Joint Commission.

Editorial

One observation must be made, however. Often, so much emphasis is placed on self-determination, patient's rights and autonomy that the physician fails to first define treatment alternatives. It is the clinical manager who must formulate opinions regarding diagnosis, make projections about progress with and without various interventions and provide recommendations to the patient and/or his proxy. Often, there is a perception that the patient and family must decide about the appropriations of intubation, mechanical ventilation, chest compression, chemotherapy, irradiation, surgery, dialysis, etc. No! The physician should define reasonable alternatives, make specific recommendations and ask for patient/proxy consent.

Summary

This decision-making process is inherently uncomfortable. The recognition and open discussions of the issues are relatively new. There is legal and practice precedent for withholding and withdrawing therapies and support. Institutions must now abide by Joint Commission guidelines while individual physicians are

permitted to practice within their own conscience. Patients' best interests must be served, but it should be accepted that permitting the dying process to evolve while attending to comfort is not only an acceptable but desirable strategy. Finally, physicians must play an active and pivotal role as the facilitators of proper care. The details of proper medical care should be physician prescribed. □

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Multiple prescription rule affects Schedule II drugs

Adele Lash
ISMA Public Relations Director

Editor's Note: Legislation to repeal the triplicate prescription rule has been introduced in the 1989 Indiana General Assembly. However, no action had been taken on the bills at the time of this writing.

As the implementation date draws closer for the state's new multiple copy prescription rule, the Health Professions Bureau (HPB), is receiving a number of inquiries from doctors.

Program director Jon Myers said the most commonly asked question is, "Which drugs are Schedule II controlled substances?" Approximately two-thirds of the calls his office has received have been from physicians seeking a list of Schedule II drugs, Myers said. Other concerns include whether physicians will be charged for the forms, when they will be available and how the program will be administered. Myers pointed out that the prescription forms are free.

Physicians who hold an Indiana Controlled Substance Registration (CSR) can expect to receive an order form for triplicate ("trips") prescription blanks this month in preparation for the July 1 start-up of the program. He said doctors who practice in more than one location will not need to order pads bearing the address of each location. They should order pads imprinted with the address of their principal office.

Perhaps the major concern for the HPB is that 3% of the mailings

sent to doctors in mid-December to explain the program were returned marked "undeliverable."

He indicated that physicians who do not have current addresses on file with the agency will not receive information on the multiple copy prescription program.

Myers suggested practitioners review their Controlled Substances Registrations to make certain they have been granted authorization for all substances they wish to prescribe. "...We have noticed that some practitioners do not realize there is a difference between Schedule II and Schedule II-N authorizations on the Controlled Substance Registration," Myers said. Schedule II-N controlled substances are narcotics. The Controlled Substance Registration indicates whether the physician may prescribe Schedule II-N controlled substances.

The triplicate prescription program will operate in this manner:

Physicians who have a current Indiana license, a Drug Enforcement Administration (DEA) registration and an Indiana Controlled Substances Registration will receive an application form this month. Physicians should complete and return the form to the HPB. Once the HPB receives the application form, prescription blanks will be printed with the practitioner's name, address and DEA number on each blank. The HPB will account for the blank pads by including a serial number on each.

Once the program goes into effect July 1, doctors will be required to use the multiple copy prescription blanks each time they

write a prescription for a Schedule II controlled substance. The prescription blanks will consist of three copies. After the doctor issues the prescription, the patient takes the first two copies to the pharmacy. The physician retains the third copy. When the prescription has been filled, the pharmacist is required to send the second copy to the HPB.

Direct dispensing

When a physician administers or dispenses a Schedule II drug directly to the patient, the doctor must check the appropriate box on the prescription, sign the completed form in the "Dispense as Written" signature block and mail the first two copies of the prescription form to the HPB. Copies must be sent by the 15th day of the month after the patient received the drug. Small amounts of Schedule II drugs administered or dispensed for minor office procedures may be reported on the Indiana Schedule II Office Use Report form, which is available from the HPB. Physicians should maintain a list of patients to whom a Schedule II controlled substance was dispensed or administered. The complete list, along with copy one and two of the prescription form, should be sent to the HPB each month.

Emergencies

Physicians will not be required to use a multiple copy prescription in three emergency situations: 1) when immediate administration of a Schedule II controlled substance is necessary for the proper treatment of the patient; 2) when no appropriate al-

ternative treatment is available, including the administration of a drug that is not a Schedule II controlled substance; and 3) when it is impossible for the prescriber to provide a written prescription on the "trips" form to a pharmacist before dispensing.

In emergency situations, physicians may issue an oral prescription or a written prescription on a form other than the "trips" form. The current practice of requiring a prescription to be written within 72 hours of a verbal emergency order remains the same under the new program. Physicians should note the date of the emergency prescription and the words "Authorization for Emergency Dis-

pensing" on the follow-up multiple copy prescription.

Exemptions

Prescribers aren't required to use a multiple copy prescription form for: 1) drug orders written for hospital inpatients; 2) Schedule II drugs from the hospital pharmacy to be administered, dispensed or ordered for a patient enrolled in a hospital-based program; or 3) inpatients in a nursing home.

All of the information will be maintained by the HPB on computer. Patient information will be destroyed one year after prescriptions have been filled. Information on physicians' Schedule II

drug prescribing practices will be kept on file for two years. Pharmacy information will remain five years, according to Indiana statute, Myers said.

Information in the files may be reviewed only by members of the licensing boards of the health professions, but Myers said no determination has been made about how often the information will be reviewed. "Possibly monthly or bi-monthly," he said. Myers said the Indiana State Police will be able to review the information filed on practitioners who are subject to an ongoing investigation.

Physicians who have questions about the new program may call Myers at (317) 232-2960. □

Schedule II controlled substances

This list is comprised of representative names of commonly prescribed Schedule II controlled substances that require the use of the Indiana Multiple Copy Prescription Blank. This rule is scheduled to take effect July 1, 1989. Source: Health Professions Bureau.

D-Amphetamine

Dextroamphetamine sulfate
Dexampex
Dexedrine
Delcobese
Ferndex
Oxydess II
Dexedrine Spansules
Spancap No. 1

Racemic Amphetamine

Amphetamine sulfate

Methamphetamine

Desoxyn
Desoxyn Gradumets
Methampex

Methylphenidate

Ritalin

Amphetamine Complex

Biphetamine 12 1/2
Biphetamine 25

Amphetamine Mixtures

Obetrol

Phenmetrazine

Preludin
Preludin S.R.T.

Opium

Pantopon
Opium tincture

Morphine

Morphine sulfate
Astromorph PF
Duramorph
MSIR
MS Contin
Roxanol
Roxanol SR
RMS

Levorphanol

Levo-Dromoran

Hydromorphone

Hydromorphone HCl
Dilaudid

Oxymorphone

Numorphan

Methadone

Dolophine HCl
Methadone HCl

Meperidine

Meperidine HCl
Demerol
Pethadol

Fentanyl

Fentanyl
Sublimaze

Sufentanil

Sufenta

Alfaniil

Alfenta

Codeine

Codeine sulfate
Codeine phosphate

Oxycodone

Roxicodone

Combinations

B & O Supporettes
Opium & Belladonna suppositories
Oxycodone & Acetaminophen
Oxycet
Percocet
Roxicet
Tylox
Oxycodone
Codoxy
Percodan
Roxiprin

Demerol APAP

Merpergan Fortis

Amobarbital

Amytal Sodium Pulvules
Amobarbital sodium
Amytal

Secobarbital

Seconal
Secobarbital sodium

Pentobarbital

Pentobarbital sodium
Nembutal sodium
Nembutal elixir

Oral Combinations

Tuinal Pulvules
Tri-Barbs
S.B.P.

General Anesthetics

Innovar
Atropine & Demerol
Morphine & Atropine sulfate

Cocaine

Dronabinol

Marinol

Nabilone

Cesamet

Health care insurance cost increases to continue

Gregory Wright, CFP
Indianapolis

Horror stories occur regularly in the health insurance marketplace. Insurance companies continue to pull out of the business or simply refuse to renew some policies. This leaves some employer groups and individuals without coverage. Sometimes they cannot obtain private plan coverage elsewhere.

Premiums increased an average of 15% in 1987 and 20% in 1988. They are expected to go up even more in 1989.

This does not tell the whole story, however. Smaller groups experienced double or triple those increases - 30% to 60% increases last year alone. Many employers have been forced to reduce benefits.

For example, the average rate for an employee without dependents was \$77 per month in 1987, compared to \$88 for 1988. The rate for 1989 is expected to go up to \$107.

This has occurred even though benefits have been reduced by many plans: deductibles increased, coinsurance maximums increased, cost containment measures were introduced, and, in some cases, dental and vision care benefits have been dropped.

Further, employees generally were required to shoulder part of this increase, as national statistics demonstrate that employees pay an increasingly higher percentage of their total health insurance costs. *Table 1* is a summary of average health plan costs.

In spite of these increases, an



Gregory Wright

increasing number of insurance companies have pulled out of the health care market. Costs have increased faster than their ability to increase prices. It was simply easier to leave the business than contend with the claims experience of certain blocks of business.

For example, during 1988 alone, several insurance companies pulled out of medical insurance markets. The following is a partial list: Massachusetts Mutual (under 15 employees), Northbrook, Ohio National, Kemper, Time (more than 75 employees), MedLife, Union Central, American General (new two to 49 employees), Provident Mutual, Mutual Security Life.

Also, many insurance companies have lost money on their group health insurance. The 1988 Argus Health Chart, published by

the National Underwriter Co., provides an insight into this situation. The latest published results show that most health insurance companies paid out more in claims and claims-related expenses than they received in insurance premiums (net of dividends). Generally, the ratio should be below .80 in order to provide the company with favorable cash flow and profits. This ratio is shown for selected insurance companies in *Table 2*.

Also, this same Argus report lists a few insurance companies that had a loss ratio for the same period of less than 100 (although not as low as the desired 80%). These include Aetna, Bankers United Life Assurance, Lafayette Life and John Alden Life.

However, the rate of health insurance profitability may not be on the mend. According to Hewitt Associates, an international benefits consulting firm, health care costs will increase 22% during 1989 due to several factors.

Physicians and hospitals are expected to be charging more for the same services. The government's cutback in Medicare and some private managed-care plans will result in more physicians and hospitals shifting charges to traditional private plans.

Outpatient services sometimes charge more than hospitals. This utilization change reduces hospitals' profits, which they attempt to shift, and sometimes costs more than hospital care. Technology improvements cost more. Catastrophic cases, such as AIDS and transplants, increase costs. Malpractice insurance rates continue to rise.

If these projected increases estimated by Hewitt are related to the cost of a single employee's medical insurance cost, 1988's average cost of \$88 per month will increase to over \$107. The reasons for this \$19 per month increase is illustrated in *Table 3*.

The solution to the rising health care insurance situation will differ from employer to employer. Some will further reduce benefits, pass increases to employees, find the absolute lowest cost plan and muddle through. Some will wait for a government policy change or this cost cycle to run its course. Others, if they are fortunate enough to have a generally healthy group, will choose some form of partial self insurance. (More information about self insurance will be provided in another column).

However, because of the shrinking number of health insurance companies and the large number of companies in financial difficulty, I believe it is time to seek a quality carrier. It isn't fun to find out your health insurance plan has been cancelled. Usually you aren't given enough time to find another carrier. Also, your new carrier might place you in the same situation a few months later. Seek quality in what appears to be an unpredictable environment. □

Gregory Wright, CFP, is vice president of the executive and employee benefits divisions of the Conner Insurance Agency, Inc. Offices are located in Indianapolis, Kokomo, Bloomington, and Fort Wayne, Ind.

Table 1

Monthly Costs

	1987	1988	1989(estimate)
Employee only	\$77	\$88	\$107
Family	\$201	\$225	\$275

Table 2*

Company	Loss Ratio
American Community Mutual	111%
American United Life	118%
Blue Cross Blue Shield (Indiana)	106%
Equitable Life Assurance	152%
Golden Rule	113%
Lincoln National Health Care	115%
Mass Mutual	111%
Time Insurance	102%

** This information is for 1987, the list is partial, these companies may have improved their loss ratios since then, the Blue Cross ratio is not directly comparable, and the author is not suggesting that this information, by itself, is sufficient to avoid doing business with them.*

Table 3

Increase Cause	Cost for Single Employee
1988 Average Cost	\$88.00
Medical inflation	\$6.23
Cost shifting from government	\$5.60
Utilization changes	\$3.10
Technology	\$2.13
Catastrophic cases	\$1.67
Malpractice insurance cost	<u>\$2.27</u>
Total added costs	\$19.00
1989 Cost Estimate	\$107.00

■ cancer corner

William M. Dugan Jr., M.D.
Indianapolis

The Association of Community Cancer Centers (ACCC): is an organization consisting of hospital cancer programs, freestanding cancer centers, HMO's and group practices. All of these institutions have the same thing in common, and that is the interest in the cancer patient and the development of programs to meet the full spectrum of needs of cancer patients and their families. Some members are small community hospitals; others are university-based comprehensive cancer centers with an interest in community activities; some are freestanding radiation therapy centers; others are large groups of oncologists. In all of these cases, ACCC members are concerned about the realities of cancer care; the how and the why of cancer program development; the costs of cancer care; the impact of prospective payment capitation and competition; and establishing and maintaining high standards for quality patient care. Application for memberships may be requested from the address listed in the following paragraph. The annual dues are \$400.

ACCC is compiling a ratings list of more than 700 health insurance companies, which is based on the reimbursement they provide for experimental chemotherapy. The rationale is to use this report to encourage the purchase of plans that offer the highest cancer care reimbursement. Inquiries should

be sent to ACCC, 11600 Nebel St., Suite 201, Rockville, MD 20852.

Saint Mary's Health Services Center for Women's Health, Grand Rapids, Mich., will sponsor a conference entitled "Breast Disease: Concepts and Controversies for the 1990s," April 27 to 28 at the Amway Grand Plaza Hotel. The two-day conference will feature a nationally recognized faculty and will focus on topics of breast screening, benign breast disease management, the impact of current oncologic research, adjuvant chemotherapy and the management of locally advanced and systemic disease. Call (616) 774-6661 for further information.

National Cancer Institute publishes the *National Cancer Bulletin* bimonthly. This bulletin is an important vehicle for publicizing current high priority clinical trials. The subscription price is \$75 per year from LP Communications, Inc., London Terrace Post Office, P.O. Box 20554, New York, NY 10011. Most oncologists receive this bulletin free of charge.

CA—A Cancer Journal for Clinicians, in its January/February 1989 issue, contains two important articles. Each year the cancer statistics for the year are updated. This issue, in addition to that article (23rd consecutive year), also presents the SEER Program Cancer Patient Survival Results for 10 years of follow-up. This presentation will be a valuable resource

for patient and family counseling. Single copies of the current issue may be requested by writing or calling your local American Cancer Society. Multiple copies (more than six) may be requested in writing. Send requirements to Arthur I. Hobbel, M.D., Editor in Chief, *CA—A Cancer Journal for Clinicians*, 53 Park Place, 8th Floor, New York, NY 10007.

Oncology Nursing Society (ONS) will hold its annual meeting May 17 to 20 in San Francisco. Contact ONS, 1016 Greentree Road, Pittsburgh, PA 15220, attention: Nancy Berkowitz.

Palliative Care Letter (PCL) is a bimonthly publication that will contain reviews of recent literature on the palliative care of cancer patients. The purpose of the PCL is to enable one to keep up with the most current palliative care articles without having to spend hours screening dozens of journals. Careful scrutiny of the literature will enable physicians to make difficult patient care decisions based on data and conclusions of well-performed clinical trials and not just anecdotal information.

The letter is not intended to be a review of the subjects discussed, nor is it the intent to provide advice regarding the diagnosis or therapy for any individual case. Inquiries should be sent to Kirk V. Shepard, M.D., Medical Director, Roxane Laboratories, P.O. Box 16532, Columbus, OH 43216. □



Snakeroot Extract

Number 14

March, 1989

PUBLISHED BY THE INDIANA MEDICAL HISTORY MUSEUM AND THE INDIANA HISTORICAL SOCIETY

Society Publishes Journals of Nineteenth-Century Physician

The life and work of an early nineteenth-century country physician in Indiana is explored in the book, *The Journals of William A. Lindsay: An Ordinary Nineteenth-Century Physician's Surgical Cases*, scheduled for publication in March by the Indiana Historical Society. Edited by Katherine Mandusic McDonell, Society medical research historian and curator of the Indiana Medical History Museum, the 262-page publication examines Lindsay's most important surgical cases during twenty years of practice, which he had recorded in four pocket-sized, leather-bound notebooks. Also included are fifty photographs illustrating Lindsay's original notes, medical instruments of the period, and surgical techniques.

Lindsay made no major contributions to the field of surgery, but he did leave behind a unique legacy — three journals that contain a wealth of information about medical care and procedures in the early nineteenth-century rural Midwest. The doctor's surgical journals are valuable historical documents because few midwestern physicians left detailed records of the operations they performed. Lindsay began writing in his casebooks on April 13, 1836, and continued until 1855. Although he recorded some of his case histories immediately, Lindsay wrote most of them several years after their occurrence.

During his medical career Lindsay, like other nineteenth-century country physicians, was neither exceptionally trained nor highly experienced. At that time, general medicine and surgery were not separate professions, and most American doctors performed minor surgery in addition to diagnosing disease and prescribing treatment.

Most of these early nineteenth-century physicians performed major operations only in cases of absolute necessity. Both physician and patient avoided operations, since prior to 1846 there was no anesthesia, and surgery was a grisly experience. Other problems plaguing doctors during the nineteenth century included a lack of surgical experience and training, few of the necessary instru-

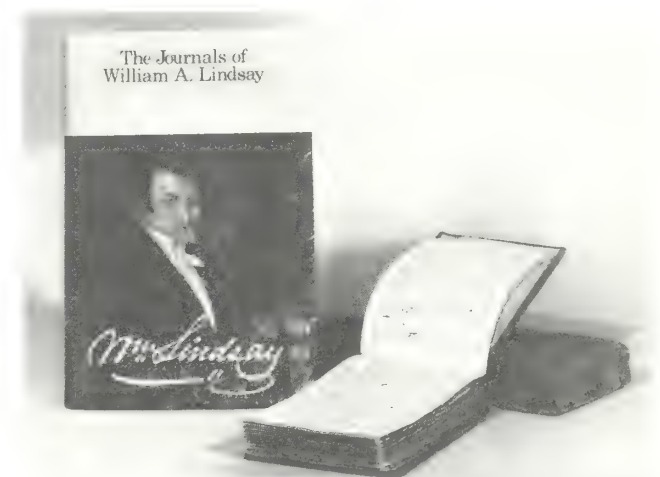


Photo by Paul Tracy Wilson

Lindsay book with two of his original journals. Journals in the collection of the Indiana State Library.

ments to perform operations, little understanding of germs and infection, and poor traveling conditions in rural areas.

Born in Lincoln County, North Carolina, on December 24, 1795, Lindsay began his medical career in Dayton, Ohio, where he apprenticed with a local physician. In 1819, he married Rhoda Allison Smith. Her father, Peter Smith, a Baptist minister and root doctor, wrote the first medical book published in the Midwest.

In the early 1820s, Lindsay moved to Lawrenceburg, Indiana, to practice medicine. He stayed there for two or three years and then attended the Ohio Medical College in Cincinnati. Lindsay never graduated, but twenty years later he did receive an honorary degree from the Starling Medical College in Columbus, Ohio. He practiced medicine for a short time in Ohio before setting up a stable career in Richmond, Indiana, in 1829.

(continued on Page 3)

Museum Receives Military Medicine Collection

Ernest L. Boyles of Terre Haute recently donated to the Indiana Medical History Museum an interesting collection of World War II medical memorabilia. The items belonged to his uncle, Lawrence L. Flowers (1919-1988), who served during World War II as a medical technician, or corpsman, in the 427th Medical Collecting Company, Medical Services Department of the United States Army. The collection contains various items that Flowers obtained during his service, including a number of German medical instruments and books that his battalion confiscated during the Normandy invasion (June 6, 1944). The Medical Services Department's personnel consisted of physicians, battlefield medics, nurses, technicians, and an administrative team. These individuals staffed the Army's first-aid stations and hospitals.

From a medical standpoint, World War II is notable for a number of reasons. It was the first war in modern times in which the number of deaths from war injuries exceeded the deaths from disease. The precautionary steps taken to stop the spread of infectious diseases in military camps and the availability of sulfa drugs and penicillin to treat infection effectively reduced the mortality rate from disease.

Advances in wound management and treatment of shock and hemorrhage also contributed to the reduction of mortality for Americans suffering battlefield wounds. In World War I, 8 percent of the wounded died; in World War II, the mortality rate for the European theater of operations was 3.9 percent. Medics employed first-aid on the battlefield to reduce the risk of shock and hemorrhage. Doctors in field and evacuation hospitals standard-



World War II memorabilia of Lawrence L. Flowers (1919-1988), Terre Haute. In the collection of the Indiana Medical History Museum.

ized a variety of medical and surgical procedures. To reduce the risk of wound infection, for example, surgeons routinely practiced debridement, or the removal of all foreign material and unhealthy tissue from the wound.

Wounded soldiers benefited from blood transfusions and the adequate supply of blood. Although physicians employed blood transfusions in World War I, blood was not "banked." Only when doctors needed a particular type of blood did they call appropriate donors. By World War II, scientists had perfected anticoagulation methods so blood could be stored for long periods of time. Between 1941 and 1945, volunteers collected over thirteen million bottles of blood for distribution by blood banks in wartime hospitals. Laboratories processed a considerable portion of blood into dried plasma, which could be stored in lightweight, easily transportable packages.

(continued on Page 3)

ISSN 0743-6033

Snakeroot Extract is a joint publication of the Indiana Historical Society's Medical History Committee (315 West Ohio Street, Indianapolis, Indiana 46202) and the Indiana Medical History Museum (Old Pathology Building, 3000 West Washington Street, Indianapolis, Indiana 46222). The newsletter is mailed to members of both the committee and the museum.

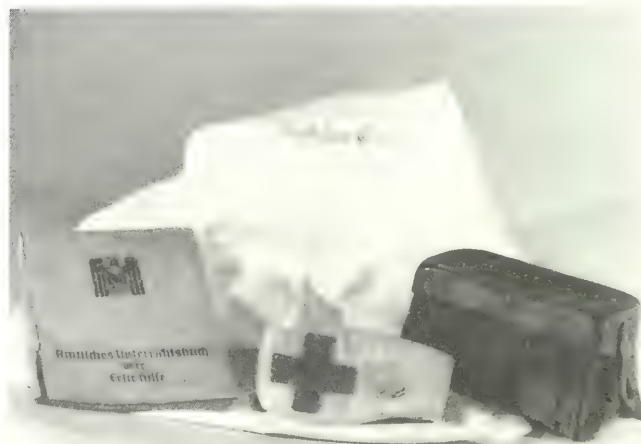
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Submit all items for publication in the newsletter and inquiries about membership information to the Managing Editor, c/o Indiana Historical Society, 315 West Ohio Street, Indianapolis, Indiana 46202.

Snakeroot Extract derives its name from the white snakeroot plant, a plant that is significant in Indiana medical history. For years, a mysterious disease called milk sickness plagued early Hoosiers. There were many theories as to the disease's cause, but the actual cause remained unknown until the 1920s. At that time, the disease was traced to the white snakeroot plant or, rather, to the consumption of milk from cows that had eaten it. The plant contains the poison tremetol.



German military supplies, ca. World War II. Background: Esmarch bandage and from left to right: first-aid manual, arm band, and medical case. In the collection of the Indiana Medical History Museum.

Museum Receives Collection

(continued from Page 2)

Moreover, the availability of well-trained anesthesiologists and the introduction of new, easily administered anesthetics such as sodium pentathol made possible a number of operations. Doctors began operating for abdominal and thoracic wounds and performed colostomies. These operations saved a large number of lives.

The American medical forces were not only well trained and hospitals well staffed and organized, but the military also had adequate and high quality supplies. The United States' supply of medicine was occasionally supplemented by German supplies. In August, 1944, for example, American troops captured over two hundred tons of German medicine and equipment.

German military medicine varied considerably from American military medicine during World War II. Germans were aware of modern methods of wound management. Georg Friedrich Louis Stromeyer (1804-1876), Bernhard von Langenbeck (1810-1887), and Friedrich von Esmarch (1823-1908) introduced the idea of open wound management in amputations and wound debridement to German military surgeons in the latter part of the nineteenth century. Esmarch also introduced first-aid bandages for use on the battlefield and advocated administering first-aid to soldiers (one of Esmarch's bandages and a German first-aid manual are among Flowers's memorabilia). However, because of inadequate staff, German physicians did not employ these techniques consistently.

During World War II, Germans performed very few

Society Publishes Journals

(continued from Page 1)

Lured by the prospect of earning \$20,000, Lindsay joined Indianapolis physician George Stipp in a pharmaceutical and medical practice in the capital in the summer of 1837. However, less than a year later the partnership turned sour, and Lindsay dissolved their joint venture.

Lindsay later moved back to Ohio and at the age of sixty-eight enlisted in the Union Army as a contract surgeon. He began his army tenure in Indianapolis and served at a number of camps and hospitals in the city and later in Kentucky. Lindsay died on May 7, 1876, in West Alexandria, Ohio.

Members of the Indiana Historical Society's Medical History Committee will receive a free copy of *The Journals of William A. Lindsay* as a membership benefit. Additional copies of the book are available through the Society for \$20 (for Society members) and \$27.50 (for nonmembers). To purchase a copy of the book, write or visit the Society's offices at 315 West Ohio Street, Indianapolis, IN 46202; or call the Indiana Historical Society at (317) 232-1882.



A feldlazarett, or German evacuation hospital. Photograph from John Boyd Coates, Jr., et al., Surgery in World War II: Activities of Surgical Consultants, Vol. I (Washington D.C.: Department of the Army, 1962)

operations for chest wounds or head injuries. Because they did not have well-trained anesthesiologists, abdominal surgery was likewise limited. The Germans believed that treatment of the less seriously injured took precedence over treatment of the seriously injured. In the treatment of abdominal wounds, German doctors did not intervene immediately. Thus, many soldiers died of shock, hemorrhage, or infection. The incidence of wound infection was high since the Germans did not practice wound debridement nor did they have penicillin to treat it. Many soldiers, too, died of shock or hemorrhage since the Germans did not have an adequate blood supply available to them and transfusion was direct. That is, doctors took blood directly from one individual and transfused it to another. The shortage of medical personnel, the unavailability of penicillin and trained anesthesiologists, the absence of modern wound management techniques, and the absence of a blood bank cost the Germans dearly. The United States had 16,112,566 combatants and suffered 291,577 battle deaths and 113,842 deaths from disease. Germany had 10.2 million enlistments and suffered 3.5 million fatalities.

Society Acquires Lindsay Portraits

The Indiana Historical Society recently acquired the portraits of Dr. William A. Lindsay and his first wife, Rhoda Allison Smith (see article on Page 1.). The portraits date from the 1830s. The purchase of the portraits was made possible in part by contributions from several of Lindsay's descendants. The portraits need considerable conservation work, and the Society soon will be conducting a campaign to raise the funds necessary to restore them.

Capital Campaign Funds Museum Improvements

Those hot, steamy days at the Indiana Medical History Museum are gone forever. With funds raised during its 1987-88 capital campaign, the museum installed a modern, climate control system. Although the building's original steam heating system can be employed in an emergency, the ninety-year-old steam radiators will be decorative rather than functional. The new system, which combines heating, cooling, and humidity control, will provide the constant temperature and humidity level necessary to protect the furnishings of the Old Pathology Building and the museum's artifact collection. While installing the system, Godby Brothers, the general contractor for the new climate control system, took great care not to destroy the historical integrity of the building. The contractors hid all ductwork and installed special reproduction, historic registers.

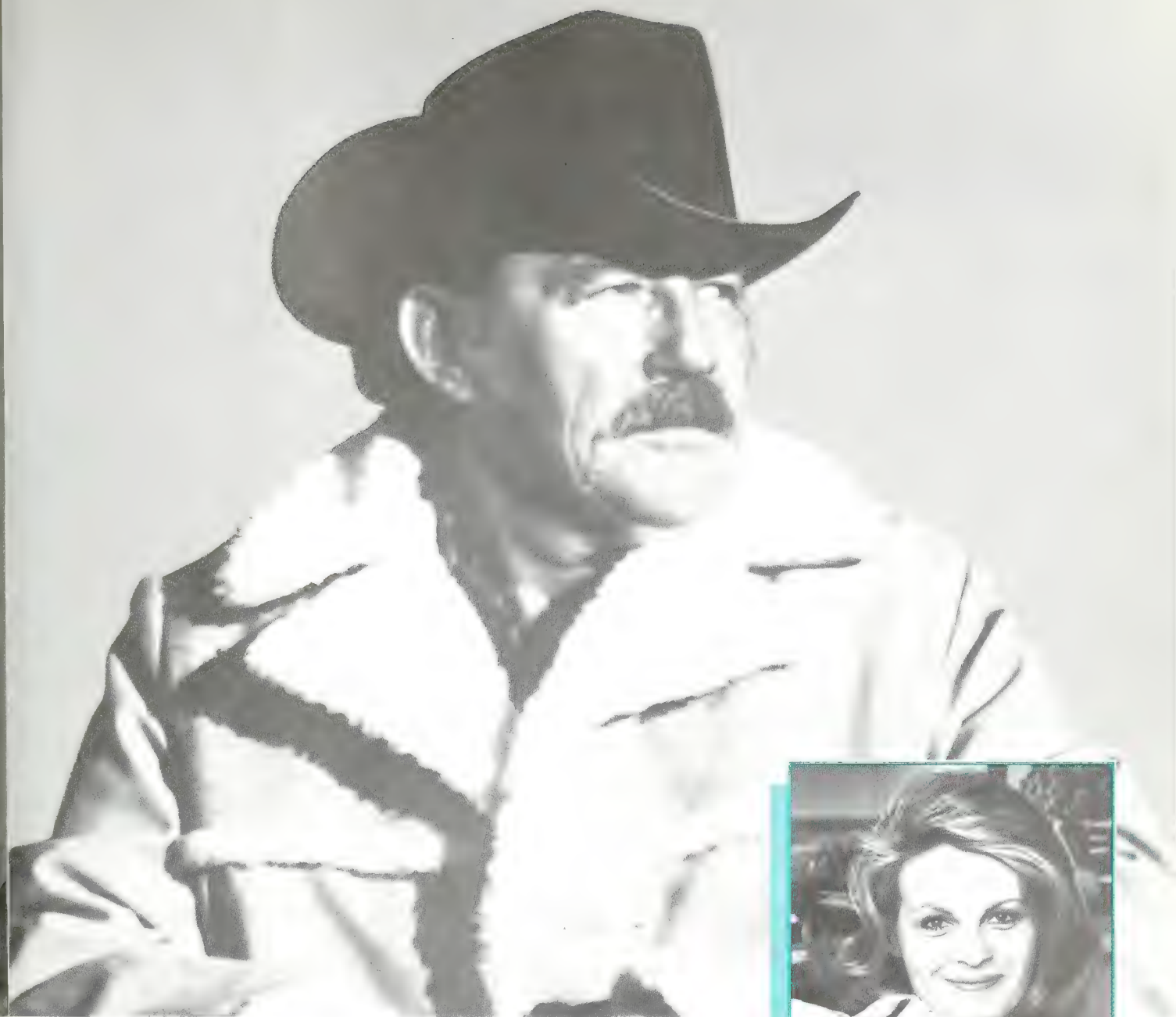
The capital campaign also funded interior painting and plastering, window repairs, and the installation of exterior signage. The museum board plans to utilize the Old Pathology Building for a wide variety of programs and meetings. According to board president T. Neal Petry, M.D., the next priority is to open an entrance to the



Exterior View, Indiana Medical History Museum

museum from Vermont Street (separate from the entrance to Central State Hospital). The board is also formulating plans to open a modern exhibition area within the Old Pathology Building, launch a variety of school programs (including special tours and traveling school kits), and undertake an annual operating support campaign.

**Indiana Historical Society
Indiana Medical History Committee
315 West Ohio Street
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For more information, contact Denise Le Doux, PPS coordinator, Indiana State Medical Association, (317) 925-7545 or 1-800-382-1721.

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ISMA-A Convention

The Owen-Monroe County Medical Auxiliary invites all auxiliaries and their spouses to the 45th Annual Meeting of the Indiana State Medical Association Auxiliary at the Indiana Memorial Union in Bloomington, Ind., April 25 to 27. Members at large and all auxiliary members are welcome.

Mary Strauss, president of the AMA Auxiliary, will attend our convention and give the keynote address on the closing day.

Business, educational and social functions have been planned for the three-day convention. Auxiliaries also may browse in the Union bookstore, view exhibits at the

Indiana University Art Museum and Lilly Library and stroll along the Jordan River through Dunn Meadow.

Tuesday evening, dinner will be at the Bloomington Country Club, followed by a program of Hoagy Carmichael melodies. On Wednesday, after the morning House of Delegates session and luncheon, members may attend a guest forum where speakers will address such topics as the status of AIDS in Indiana and dealing with stresses of the medical marriage. Leadership workshops will provide training for presidents elect and county chairmen in membership, legislation, AMA-ERF and health projects. All auxiliaries are welcome to attend the workshops. A walking tour of the Old Crescent area of the Bloomington campus will provide a change of pace

and end the afternoon activities.

Wednesday evening auxiliaries and spouses are invited to a reception at the University Club in the Indiana Memorial Union and dinner in the Frangipani Room. "Sounds of South," a song and dance troupe of 30 students from Bloomington High School South, will entertain dinner guests.

Thursday will begin with a memorial breakfast, a return to a tradition of past conventions. When the House of Delegates reconvenes, Mrs. Strauss will give the keynote address and Lura Stone will be installed as our president. The convention will close with a celebration luncheon to thank Ann Wrenn for her successful year as ISMA-A president and to launch Lura's year with our good wishes and pledges of support. □

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February CME quiz answers

The following letters are the answers to the CME quiz that appeared in the February 1989 issue: "Systemic Side Effects of Glaucoma Medications."

- | | |
|-------|--------|
| 1. a. | 6. c. |
| 2. b. | 7. b. |
| 3. c. | 8. c. |
| 4. a. | 9. b. |
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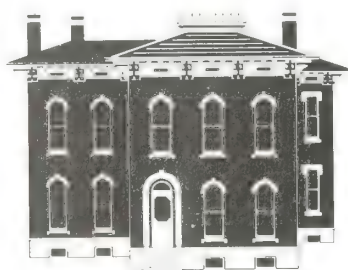
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 Thomas C. Tyrrell, Hammond (1989)
 John A. Knote, Lafayette (1990)
 Alvin J. Haley, Carmel (1990)
 George T. Lukemeyer, Indianapolis (1990)

AMA ALTERNATE DELEGATES (Terms end Dec. 31)

Herbert C. Khalouf, Marion (1989)
 Martin J. O'Neill, Valparaiso (1989)
 Richard L. Reedy, Yorktown (1989)
 Shirley Thompson Khalouf, Marion (1990)
 Max N. Hoffman, Covington (1990)
 Edward L. Langston, Flora (1990)

DISTRICT OFFICERS AND MEETINGS

1 — Pres: Alan H. Johnson, Evansville
 Secy: Kishor R. Bhatt, Boonville
 Annual Meeting: 1989
 2 — Pres: William A. Nice, Bloomington
 Secy: Andrew R. Jones, Bloomington
 Annual Meeting: May 19, 1989
 3 — Pres: James M. Jacobi, Bedford
 Secy: Eric V. Schulz, Bedford
 Annual Meeting: May 12, 1989
 4 — Pres: Frank L. Fable, Lawrenceburg
 Secy: William J. Granger, Lawrenceburg
 Annual Meeting: May 3, 1989
 5 — Pres: Kennard B. Sproul, Brazil
 Secy: Peggy Sankey-Swaim, Rockville
 Annual Meeting: Sept. 28, 1989
 6 — Pres: Robert J. Warren, Richmond

Secy: Stephen M. Dillinger, Greenfield
 Annual Meeting: May 10, 1989
 7 — Pres: Lloyd C. Miller, Danville
 Secy: H. Marshall Trusler, Greenfield
 Annual Meeting: 1989
 8 — Pres: L. Jane McDowell, Muncie
 Secy: Charles W. Bartholomew, Muncie
 Annual Meeting: June 7, 1989
 9 — Pres: Timothy N. Brown, Crawfordsville
 Secy: R. Adrian Lanning, Noblesville
 Annual Meeting: June 28, 1989
 10 — Pres: Mary E. Carroll, Crown Point
 Secy: Barron M. Palmer, Hammond
 Annual Meeting: June 28, 1989
 11 — Pres: James P. McCann, Wabash
 Secy: Fred C. Poehler, La Fontaine
 Annual Meeting: Sept. 20, 1989
 12 — Pres: Thomas D. Smith III, New Haven
 Secy: William J. Aeschliman, Fort Wayne
 Annual Meeting: Sept. 21, 1989
 13 — Pres: G. Beach Gattman, Elkhart
 Secy: Thomas J. Eberts, South Bend
 Annual Meeting: Sept. 13, 1989

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 Tina Sims, *INDIANA MEDICINE*

■ news briefs

ASCP study shows vacancies

The results of a survey commissioned by the American Society of Clinical Pathologists (ASCP) show an alarming percentage of positions in U.S. medical laboratories are vacant. The survey indicates that 9.3% of medical technologist and 13.6% of cytotechnologist positions are vacant. The ASCP is working to increase the number of graduates, improve retention among those people already in the field and help return those people who are not working in medical technology.

NIH Conference to be May 8-10

A National Consensus Development Conference will address "Sunlight, Ultraviolet Radiation and the Skin." The conference will unite biomedical investigators, practicing physicians, consumers and representatives of public interest groups. It will be May 8 through 10 at the Warren Grant Magnuson Clinical Center, National Institutes of Health, Bethesda, Md. To register or obtain further information, contact Andrea Manning, Prospect Associates, Suite 500, 1801 Rockville Pike, Rockville, MD 20852 —(301) 468-MEET.

LocumTen newsletter available

LocumTen is the only newsletter that is devoted to medical locum tenens. Although almost half of today's physicians haven't heard of the term, locum tenens physicians are increasing. In fact, using locum tenens physicians is becoming the primary way medical institutions temporarily fill their vacancies. Locum tenens is Latin for "temp," meaning temporary surgeons, psychiatrists, obstetricians, family practitioners, etc.

A *Locum Ten* subscription is

available to any health care professional or institution at no charge. To obtain a subscription, write Syntax Inc., 751 S. Fifth St., Philadelphia, PA 19147.

NIA offers fact sheets

The National Institute of Aging (NIA) has assembled a collection of fact sheets of particular interest to women titled *Age Pages*. These sheets provide information and resources related to self-care and prevention practices.

To obtain this free collection of *Age Pages*, write to the NIA Information Center/Women's AP, 2209 Distribution Circle, Silver Spring, MD 20910 or call (301) 495-3455.

Child abuse booklet available

The National Committee for Prevention of Child Abuse has published a booklet, "Guidelines for Establishing Family Resource Programs," in order to prevent abuse. According to the committee, rising divorce rates, the demise of the extended family and frequent relocation contribute to the increasing isolation of the family.

A single copy of the booklet is \$3.50, including postage and handling. To order, send a check to NCPA, Publication Sales, P.O. Box 94283, Chicago, IL 60690. For more information, contact NCPA at (312) 663-3520.

Survey measures patient care

Press, Ganey Associates, Inc. has released the results of a national survey involving more than 50,000 ex-patients of 89 client hospitals. It is the first national survey on the impact of hospital size and other variables on patient perceptions of care. A comprehensive copy of the study can be ordered by writing Press, Ganey

Associates, Inc., P.O. Box 1064, Notre Dame, IN 46556.

Newsletter publishes abstracts

The Joint Commission on Accreditation of Healthcare Organizations is publishing "Abstracts of Clinical Care Guidelines," a bi-monthly newsletter that monitors 27 journals and professional society publications for articles on clinical guidelines.

It is a resource for use in quality assurance, risk management and utilization review. Subscriptions are \$55. For more information, call a customer service representative at (312) 642-6061.

Task force to study RBRVS

The American Group Practice Association (AGPA) has formed a task force with Ernst & Whinney with assistance from the Physician Payment Review Commission and William Hsiao, Ph.D., of Harvard University to study the impact of the resource based relative value scale.

The AGPA initiated the new study of the Harvard RBRVS to evaluate the short- and the long-term effects of the proposed Medicare reimbursement system on medical group practices. The AGPA represents more than 23,000 physicians in nearly 300 U.S. group practices.

Koala offers videotapes

Koala Centers, providers of treatment for alcoholism and drug abuse in Indiana and other states, have developed two 20-minute videotapes on adolescents and adults. They are available at any Koala Center, the Indiana State Medical Association and any participating Hook's or Walgreen drug stores in Indiana and can be rented at no charge with confiden-

tiality of the renter assured.

The Koala Center's statewide Helpline for information on these diseases is 1-800-622-4711.

Kiwanis to aid Riley

The 230 Kiwanis Clubs in Indiana have pledged to raise \$100,000 in 1989 for the Kiwanis Trauma Life Center for Children at Riley Hospital. The money will purchase a pediatric emergency transport vehicle to meet the increasing demand to transport to Riley by Indiana hospitals.

The new Kiwanis vehicle will be equipped and designed for the safety and care of children with traumatic injuries. □

Indiana Medicine gets a new look

You may have noticed this issue of INDIANA MEDICINE has a new look as a result of a desktop publishing system and a redesign of the publication. The journal's nameplate also was revised to coordinate with the new look.

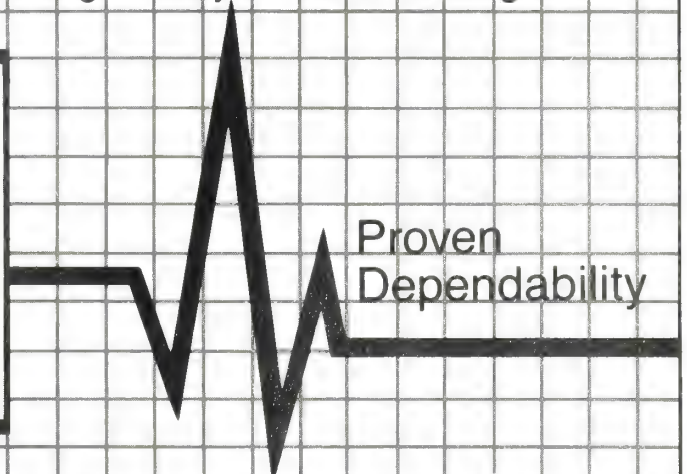
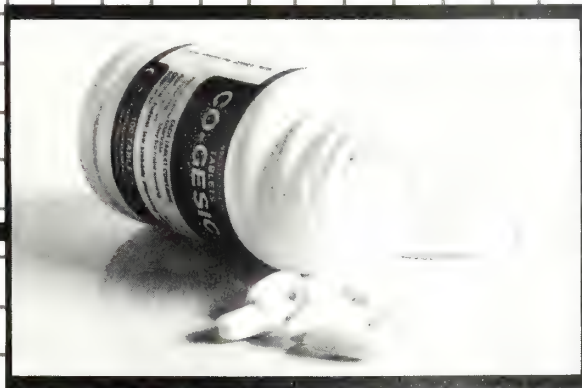
The INDIANA MEDICINE staff now can typeset all copy and lay out the pages on an Apple Macintosh computer. The desktop publishing system will allow more flexibility and control in production. Modern technology enables the change to desktop publishing without sacrificing print quality.

Along with these changes, INDIANA MEDICINE has a new printer—The Ovid Bell Press in Fulton, Mo. Ovid Bell also prints 11 other state medical journals along with 150 other publications.

One aspect about INDIANA MEDICINE will not change—our continued pledge to maintain quality of scientific and feature articles that inform and educate Indiana physicians.

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Dr. William E. Graham, a Fort Wayne obstetrician and gynecologist, has been elected chairman of the Indiana Section of the American College of Obstetricians and Gynecologists for a three-year term.

Dr. Christos D. Gatzimos of Peru retired Jan. 1 as head pathologist at Dukes Memorial Hospital in Peru.

Dr. James E. Hull, Lafayette, attended an exchange seminar in Moscow and Leningrad and visited several hospitals in Russia. The exchange program included 15 doctors from the United States.

Dr. Charles W. Coats, a Greenwood psychiatrist, was appointed as the program director of CPC Valle Vista Hospital's Child Psychiatry Unit.

Dr. Frank W. Peyton, Lafayette, has published his World War II diary, written while stationed in Sicily, Italy, and North Africa; the book is available from Dr. Peyton.

Dr. Frederick M. Kelvin, Indianapolis, presented "Colorectal Carcinoma Detected Initially with Barium Enema Examination: Site Distribution and Implications" at the 74th annual meeting of the Radiologic Society of North America in Chicago.

Dr. Thomas J. Cittadine, a Noblesville orthopaedic surgeon, has published an orthopaedic terminology word book with Slack Publishing Company, Inc.

Dr. Robert H. Rang, Washington, received a Sagamore of the Wabash Award for his medical tenure in Washington; he is chief of surgery at Daviess County Hospital.

Dr. James R. Rudolph of Kokomo will make house calls to ensure that people who are too ill or too busy to visit their doctor's office receive medical care.

Dr. William R. Nunery, an Indianapolis oculo-plastic surgeon, was co-host of a continuing medical education course that covered recent advances in neuro-ophthalmology and orbital surgery.

Dr. Pulkit J. Patel, a Terre Haute urologist, is the new chief of staff at Union Hospital in Terre Haute; other officers are **Dr. Harold A. Rosene**, president; **Dr. J.F. Pangan**, vice president; **Dr. Richard S. Mayrose**, secretary; and **Dr. Vasumati D. Patel**, treasurer.

Dr. Michael W. Manzie, an Indianapolis surgeon, retired from his medical and surgical practice in December.

Dr. William H. Leech, a Crawfordsville family practitioner, has finished his term of service on the AMI Culver Union Hospital board of directors and received a plaque recognizing his service to the hospital.

Dr. Louis Moosey, a Union Mills family practitioner, was recognized for his 50 years of service to LaPorte Hospital during the medical staff's annual meeting in December; **Dr. William G. Moore**, **Dr. Jose D. Sanchez** and **Dr. James J. Sprecher**, of LaPorte, received 25-year service plaques.

Dr. Rodney A. Mannion, a LaPorte urologist, was elected to a three-year term as the Indiana representative to the North Central section of the American Urological Association during its annual meeting in Orlando, Fla.

Dr. Joe G. Conley, New Albany, has received a three-year appointment as Cancer Liaison Physician for the cancer program at Floyd Memorial Hospital in New Albany.

Dr. Glen W. Irwin Jr. of Indianapolis was elected to the board of directors of the Walther Cancer Institute.

Dr. Calvin N. Steussy, a New Castle pathologist, received a 30-year service award from the Henry County Memorial Hospital at its annual Christmas party.

Dr. Jeffrey J. Libra of La Porte has been named a diplomate of the American Board of Family Practice.

Dr. Craig W. Hamilton and **Dr. Dale A. Sloan**, Fort Wayne surgeons, were named fellows of the American College of Surgeons.

Dr. Paul G. Lindenberg, an Indianapolis family practitioner, retired in November 1988, after more than 30 years of service.

Dr. Lori Fuqua, a Terre Haute family practitioner, received a fourth place award from the American Academy of Family Practice for a medical research study that she designed and conducted.

Dr. James S. Fitzpatrick and **Dr. Ralph M. Steffy**, both of Portland, were honored for their service to the community at a retirement reception in Portland.

Dr. Dallis M. Bowditch, Logansport, was elected president of the medical staff at Memorial Hospital in Logansport at its annual meeting in December; other officers are: **Dr. Carl Boyd**, president-elect; and **Dr. Ruben Vizcarra**, secretary.

Dr. Guy J. Hoover, an Evansville general surgeon, retired in 1988 after more than 40 years of practice.

Dr. Gregory J. Toma, Indianapolis, has relocated his ophthalmologic practice to Crawfordsville where he is assuming the practice of **Dr. Paul E. Ludwig**.

Dr. John M. Hague of Indianapolis was elected president-elect of the Arthritis Foundation, Indiana chapter.

Dr. James B. Steichen was one

of six U.S. surgeons who participated in the U.S./Soviet symposium on plastic and reconstructive microsurgery held in Moscow.

Dr. Thomas T. Streeter of Indianapolis was initiated as a fellow of the American College of Surgeons at the 1988 Clinical Congress in Chicago.

Dr. Gary T. Raflo was awarded fellowship status by the American Academy of Facial Plastic and Reconstructive Surgery at its annual meeting in Washington, D.C.

Dr. Marvin E. Mishkin, an Elkhart cardiologist, presented a \$30,000 echocardiograph machine to the Indiana Vocational Technical College medical assistant program.

Dr. John E. Mitchelson of Indianapolis has assumed the ophthalmologic practice of Dr. Gregory J. Toma, at Westlake Medical Center in Indianapolis. □

New ISMA members

Mohammed A. Abbas, M.D., Westchester, Ill., diagnostic radiology.

Peter B. Blankenhorn, M.D., Indianapolis, internal medicine.

Terry E. Brennan, M.D., Highland, dermatology.

Jessie E. Cooperider, D.O., Tipton, general practice.

David R. Diaz, M.D., Noblesville, psychiatry.

David W. Dobbs, M.D., Lawrenceburg, family practice.

Nicholas Drakos, M.D., Jeffersonville, psychiatry.

William H. Estes, M.D., Madison, internal medicine.

Nabil A. Gayed, M.D., Huntington, general surgery.

Sheila M. Guelta, M.D., Jeffersonville, pediatrics.

Physician Recognition Award recipients

The following ISMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned and is acceptable proof in most states requiring CME in re-registration that the mandatory hours of CME have been accomplished.

Bastnagel, James P., Indianapolis
Byllesby, Joyce E., Washington
Calhoon, John P., Indianapolis
Conway, Thomas J., Terre Haute
Cook, Ian H., Fort Wayne
De Palma, Bruno, Lawrenceburg
Ferree, H.L., Indianapolis
Guevara, Frenita B., Marion
Haynes, John T., Indianapolis
Holl, Carl W., Noblesville

Koss, Kenneth W., Muncie
Leipzig, Thomas J., Indianapolis
Osos, Nancy A., Fort Wayne
Otten, Carl E., Indianapolis
Reimers, Roger A., Bloomington
Renshaw, Mark A., Fort Wayne
Rogers, Susan J., Marion
Stanford, John R., Fort Wayne
Towannasut, Verapon,
Merrillville

J. Paul Kern Jr., M.D., Indianapolis, physical medicine/rehabilitation.

Thomas F. Kling Jr., M.D., Indianapolis, orthopedic surgery.

Julie Summers Lee, M.D., Jeffersonville, ophthalmology.

Gary E. Loyd, M.D., Louisville, Ky., anesthesiology.

Steven M. Moffatt, M.D., Indianapolis, internal medicine.

J. Roberto Moran, M.D., Evansville, pediatrics.

Mark S. Munroe, M.D., Bedford, internal medicine.

H. Allen Neal, M.D., Daleville, family practice.

Adrian J. Pellegrini, M.D., Jeffersonville, psychiatry.

John F. Perez, M.D., Oak Lawn, Ill., internal medicine.

Eric R. Retrum, M.D., Anderson, radiology.

Robert K. Retrum, M.D., Anderson, diagnostic radiology.

Ronald E. Rourke, M.D., Terre Haute, obstetrics and gynecology.

Pravin Sanghvi, M.D., Knox, obstetrics and gynecology.

Kenny E. Stall, M.D., Franklin, obstetrics and gynecology.

Henry G. Stein, M.D., Indianapolis, orthopedic surgery.

Leslie Strouse, M.D., New Albany, internal medicine.

Noshir R. Toddywalla, M.D., Cincinnati, Ohio, urological surgery.

John H. Vandergrift, M.D., Elkhart, emergency medicine.

Robert D. Walton, M.D., Sheridan, occupational medicine.

Richard B. Wenzler, M.D., Indianapolis, internal medicine.

K.G. Woodward, M.D., Oak Forest, Ill., neurology.

Barbara L. Zimmerman, M.D., Goshen, emergency medicine.

Residents

Maria C. Poor, M.D., New Palestine, psychiatry.

Bruce W. Speicher, M.D., Mishawaka, family practice.

Beth Popp Wuhrman, M.D., Indianapolis, internal medicine. □

Mail and Memos

by Arthur R. Pell, Ph.D., Consultant
Dale Carnegie & Associates, Inc.

Every morning, when Don Michaels emptied his in-basket, he would read each of the letters, memos, brochures and other items and carefully divide them into four neatly stacked piles. In the first pile, he placed letters and memos that required immediate response; in the second pile, those for which he needed additional information or could delegate to a subordinate; the third for materials on which he didn't have to take any action, just read them and file them away and the fourth was the junk mail that would be immediately discarded.

He scheduled a time for dictating responses at a convenient time each day. At that time, he would reread each letter so he could respond appropriately. At another time during the day, he would reread the memos and letters in the second pile, obtain the needed information or delegate it to somebody else. As he had read the memos and letters in the third pile, these were given to his secretary to be filed.

The time involved in reading and rereading each of those pieces of correspondence took an inordinate amount of Don's working day. Don was complaining about his inability to get all of his work done to one of his colleagues, Susan Green.

"Sue, I know your workload is as heavy as mine, yet you seem to have time for everything and even a chance to relax. How do you do it?"

Sue responded: "I used to have the same problem, but by careful time management and eliminating duplication of work, I have made my job much easier."

"I can sum it up in a simple phrase: *'Read a letter or memo once and take action at that time.'*"

Let us look at some specific approaches to expediting the processing of mail and memos.

Do it — NOW

When you read that letter the first time, make notes on a Post-It slip on the key points that you will need in responding. Then when you dictate your reply, it is not necessary to reread the entire letter. It may only save you two or three minutes per letter, but if you dictate responses to 30 letters a day, this saves you 90 minutes to use on more productive matters.

Use the same approach with letters or memos for which you need additional information. Note on the slip what information is needed and the source from which you can obtain it. This will save you rereading that letter when you reach it. If it is something that you intend to delegate, note during that first reading to whom you will delegate it and any instructions you wish to convey.

Don't answer a memo with another memo

You receive a memo from the manager of another department asking you to give him the current inventory of a list of items, specifying the items by name and stock number. Typically, you respond by writing a memo stating: "Per your request, here is the current inventory of the following items." Then you list each of the items by name and stock number and the quantity on hand.

It would be more effective to just write the quantities next to the item name and number of the original memo. This saves considerable time and serves the purpose. In many cases copies are not even needed, but if there is a need, a photocopy of the original memo with your notations is easy to make.

Some time management specialists recommend that a similar approach be taken to replying to letters from outside the organization. Often the inquiry made by the correspondent can be answered by a single sentence. Why write an entire letter? Just write the reply on the bottom of the letter you received and send it back to the sender.

When Ken Thompson, Vic Allen's boss, called Vic into his office, Vic expected to be praised for his good work. Instead, Ken said, "Vic, I have a complaint about you. Gloria Wilson, the Marketing Manager of Multiproducts, called me and said you had responded to a letter she sent to you in a most unprofessional manner."

Vic responded: "She asked me a simple question. By writing the reply on her letter, look at all the time I saved."

"Sometimes," said Ken, "the image we present to our customers or the public is more important than time saved. Unless you know your correspondent very well, take the time to write a letter."

Delegate correspondence

Often the information requested in a letter or memo must be obtained from a subordinate. Instead of asking the subordinate to just obtain the information, give that person the full responsibility of writing the reply. This not only saves you the time of digesting the information and then write the letter, but gives your subordinate valuable experience in performing the entire task. In the beginning you will probably want to read and sign the final letter, but once the subordinate becomes more and more familiar with the areas covered, it may not be necessary for you to become involved at all.

Dump it

Remember Don Michaels' third pile of papers? These were the letters and memos that were sent to him by other departments just to advise him of their contents. He was not required to take any action. Don gave them to his secretary to file. Why? The chances are that he will never have to see them again. Company files are loaded with copies of such memos. Dump them! This may be a shocking thing to do in many companies, but there is no real need for most of them. Obviously, if you have good reason to believe you will have to refer to those papers, you should have them filed. You may be concerned that maybe you will need them some time in the future. In the remote possibility that a file you discarded is needed, the person who wrote it and the person who received the original undoubtedly can provide you with a copy. Dumping letters and memos on which no action is required does not save you time, but it saves considerable time for your secretary or file clerk and keeps those file cabinets from becoming overstuffed.

Paper work is a time consuming aspect of most people's jobs. By minimizing the amount of paper work, we can use the time we save to perform more valuable services for our company and make ourselves more effective in our jobs. By looking at each paper only once and taking action at that time, we can accomplish this goal.

Pocket/purse size reprints may be purchased (10 for \$10.00) or (25 for \$20.00) from Dale Carnegie & Associates, Inc. 1475 Franklin Avenue, Garden City, NY 11530

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IMPORTANT NOTICE

The Medical Licensing Board of Indiana will send renewal notices May 1 for license renewal fees due June 30, 1989. There is no grace period this year. Any physician who does not pay his renewal fee by the June 30 deadline will have to pay a \$50 penalty in addition to the \$50 renewal fee. If you have moved since last receiving your renewal registration form, please notify the Medical Licensing Board.

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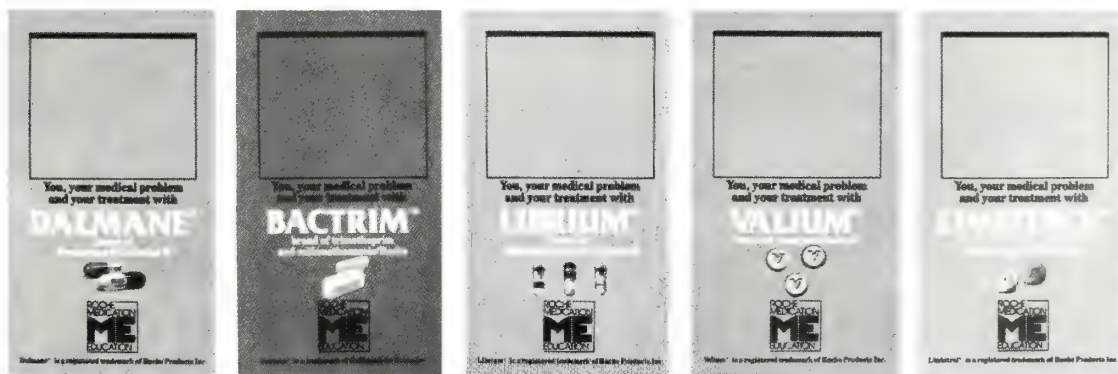
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INDIANA MEDICINE

The Journal of the Indiana State Medical Association

April 1989

Vol. 82, No. 4



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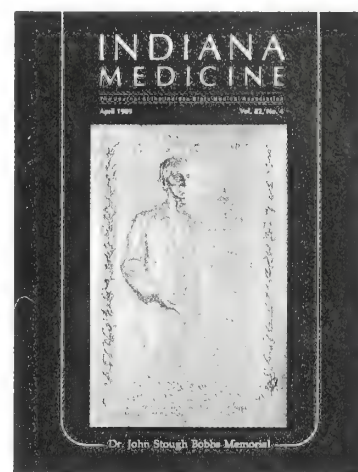
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All issues since 1967 are available on microfilm from University Microfilms International, 300 N. Zeeb Road, Ann Arbor, MI 48106. Indexed in *Index Medicus* and *Hospital Literature Index*.

Advertising rates and data available upon request.

Malpractice cap increase moves to Senate

A consensus agreement to increase the cap on awards to \$750,000 from the Patient's Compensation Fund under the Indiana Medical Malpractice Act moved to the Indiana Senate after being passed by the House. The change would take effect for acts of malpractice that occur after Jan. 1, 1990. The underlying \$100,000 of coverage will not be affected. It is believed no increase may be needed in the surcharge for one and possibly two years.

As part of the agreement during negotiations, the parties involved signed a written statement that they will not seek or support a legislative study committee to review Indiana's Medical Malpractice Act until after Jan. 1, 1993. ISMA leaders considered four factors in deciding to participate in negotiations on this issue with the Indiana Trial Lawyers Association, the Indiana Hospital Association and insurance company representatives.

1. Historically, changes to the Indiana Medical Malpractice Act have been made by consensus and with bipartisan support. It is important to continue with this tradition to keep the act from becoming politicized.
2. Maintaining the provisions of the act, specifically the medical review panel process and the statute of limitations, meant the act must not be considered by a legislative study committee in a public forum. It was difficult to stave off changes to the act in 1985 in a legislative study committee.
3. There was a perceived difficulty in justifying publicly the \$500,000 cap in light of increased health care costs since that cap was set in 1975.
4. Successfully fighting a raise in the cap this year would not necessarily prevent other parts of the act from possibly being changed on an annual basis.

After weighing these factors carefully and with the knowledge that some ISMA members likely would disagree with any raise in the cap, ISMA moved ahead with its strategy of confining discussions of the act to the cap only and to do whatever possible to maintain the act.

When the smoke clears from this session of the Indiana General Assembly, it appears the cap on awards from the Patient's Compensation Fund will be increased but other important components of the act will not be subject soon to a formal legislative scrutiny. It has been this give and take, consensus development and bipartisan support that have been important in maintaining the act throughout its history. This same strategy was utilized in the 1989 session. □

■ medical museum notes

Charles A. Bonsett, M.D.
Indianapolis

The transfer of the Dr. John Stough Bobbs Memorial is now a reality. It was moved from the St. Clair Street Central Library of the

Indianapolis-Marion County Public Library system to the new Indiana University Medical Center Medical Research and Library Building. The memorial to Dr. Bobbs, president of the Indiana State Medical Society (now Association) in 1868, is the work of Gutzon Borglum,

the American sculptor who carved Mount Rushmore.

The transfer of the memorial was made possible by the cooperation of Raymond E. Gnat, director of public libraries, and members of the Indianapolis-Marion County Public Library Board. □

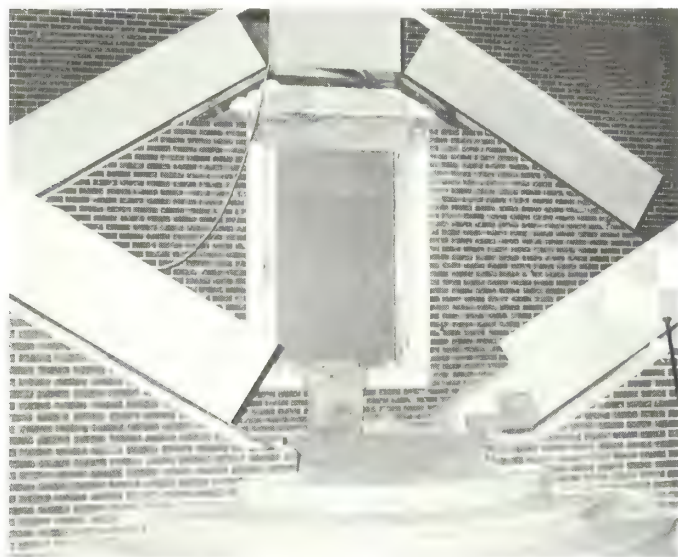


Photo 1



Photo 2

Photo 1: The area reserved for the Bobbs Memorial was designed to be the focus of attention when entering the new library.

Photo 2: After lifting the Bobbs Memorial, workmen from Geupel DeMars, general contractor for the new building, decide how to mount it to the wall. Left to right: Scott Day, Howard Allen, Nelson Howell, Brian Courtney, John Gilson and Lucius Richardson. Rededication of the memorial is set for May. Groups that helped preserve the Bobbs Memorial include the I. U. School of Medicine Class of 1952, the John Shaw Billings History of Medicine Society and the Indiana Medical History Museum.

Photo 3: The Bobbs Memorial, which weighs approximately 600 pounds, is mounted to the wall with massive bolts.

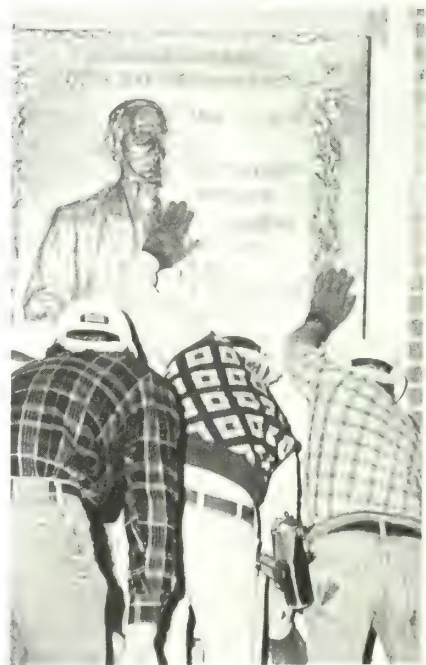


Photo 3

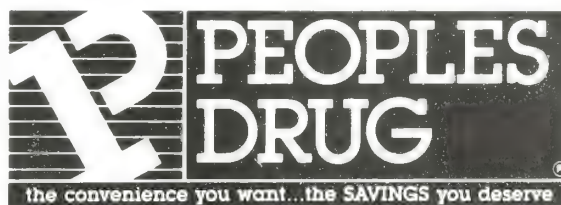
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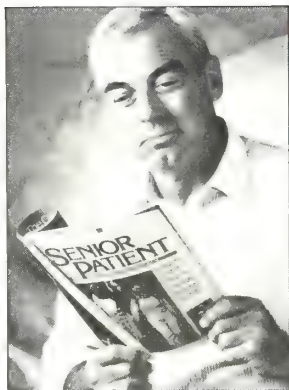
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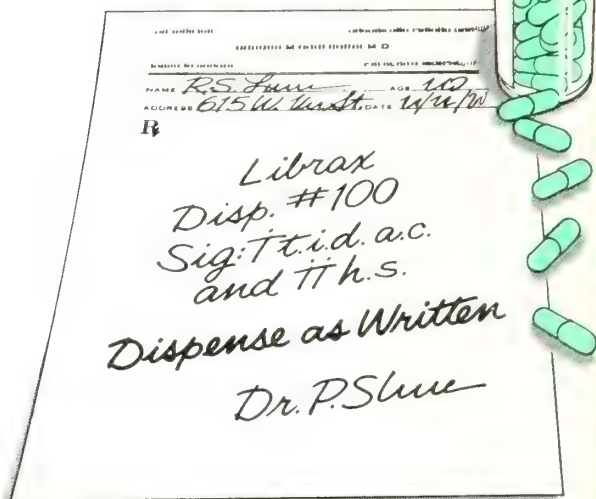
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- Helping patients with hearing problems
- How hard should we try to get older patients to stop smoking?
- Caring for diabetic foot ulcers

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As with all anticholinergics, inhibition of lactation may occur. Withdrawal symptoms of the barbiturate type have occurred after discontinuation of benzodiazepines (see Drug Abuse and Dependence)

Precautions: In elderly and debilitated, limit dosage to smallest effective amount to preclude ataxia, oversedation, confusion (no more than 2 capsules/day initially, increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider pharmacology of agents, particularly potentiating drugs such as MAO inhibitors, phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions reported in psychiatric patients. Employ usual precautions in treating anxiety states with evidence of impending depression, suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation reported very rarely in patients receiving the drug and oral anticoagulants, causal relationship not established. Inform patients to consult physician before increasing dose or abruptly discontinuing this drug.
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■ what's new

Marion Laboratories has published the 1988 *Marion Managed Care Digest - PPO edition*, a companion publication to *Marion Managed Care Digest - HMO edition*. Another volume is scheduled to appear within 60 days. It is devoted to an update on financial data for HMO and PPO markets.

Eastman Kodak has added another rapid test to its line of Sure-Cell test kit products. The office test detects chlamydia trachomatis antigen in minutes. Chlamydia trachomatis has been demonstrated as a major cause of cervicitis, urethritis, endometritis and pelvic inflammatory disease in women. The tests should be used for testing women only. Clinical data on males are being collected and will be submitted to the U.S. Food and Drug Administration.

Janssen Pharmaceutica, Inc., a member of the Johnson & Johnson family of companies, recently introduced HISMANAL® (astemizole), the first once-a-day antihistamine to provide 24-hour protection and season-long effectiveness. Clinical studies of HISMANAL show the incidence of sedation is comparable to that of placebo, and it does not lose its effectiveness throughout the allergy season.

Sensory Systems, Inc. has developed a pamphlet that is available to medical practitioners at no charge. The pamphlet, "Hearing Loss—Your Doctor Can Help," encourages patients to speak to their family doctors about hearing problems. This project is part of an educational effort to help the estimated 22 million people who have hearing problems. Sensory Systems hopes to erase the negative stigmas associated with hear-

ing aids. To order the pamphlet, call Sensory Systems at 1-800-622-EARS from 9 a.m. to 6 p.m. EST.

The American Society of Clinical Pathologists (ASCP) Press has published the first book that explores both the scientific and legal implications of testing for drugs of abuse. *Drug Testing in the Workplace* is written by medical and legal experts. The book discusses the purpose and use of screening and confirmation tests, preventive methods for sample adulteration, testing in the framework of the discrimination lawsuit, the need for testing from the employer's point of view, union considerations and NIDA guidelines. The book is \$35. To order a copy, call 1-800-621-4142.

Medtronic Inc., has developed a Disposable Temporary Pacemaker Pouch for use with temporary pacemakers that offers increased patient safety while contributing to reduced equipment repair costs. The pouch is packaged individually to help prevent the transmission of antigens from one patient to the next. The adjustable Velcro strapping allows the pouch to be secured to the patient, bed or IV pole, helping to reduce damage to temporary pacemakers.

News of what is new in the medical supply industry is composed of abstracts from news releases. Each item published does not necessarily constitute an endorsement of a product or recommendation for its use by INDIANA MEDICINE or by the Indiana State Medical Association.

Norwich Eaton Pharmaceuticals announced the findings of the recent International Conference on Urinary Tract Infections in Montreal, Canada. Norwich Eaton's Macrochantin® (nitrofurantoin macrocrystals) was reported by experts as being the ideal agent for urinary infection in the uncomplicated form. The drug centers its antibiotic effect on the urinary tract alone.

Lederle Laboratories has introduced FiberCon®, one of the newer bulk-forming laxatives for over the counter marketing. This product, calcium polycarbophil, is a synthetic hydrophilic colloid that when ingested with water or other liquids forms a gelatin-like, colloidal mass in the intestinal tract. The increased bulk in the stool promotes muscular activity in the bowel without causing local irritation or nutrient depletion.

Mada Medical Products has introduced the 2200 series of disposable manual resuscitators. These single-use disposable units provide high performance and are cost efficient. The transparent resuscitators feature an anti-locking one-way valve that prevents lockup under high-flow conditions. These new units are available in adult and pediatric models with either a volume oxygen reservoir bag or a flexible hose reservoir.

Bristol-Meyers has received approval from the U.S. Food and Drug Administration for marketing Desyrel®/DiviDose® 300 mg. Desyrel is an antidepressant and is effective in relieving depression and depression with anxiety. It is associated with a low incidence of disruptive side effects. □

■ cme calendar

St. Vincent Hospital CME

The following courses are continuing medical education programs scheduled at St. Vincent Hospital in Indianapolis for April and May.

- Apr. 29-30** – Seventh Annual Spring Seminar in Dermatopathology, A. Bernard Ackerman, M.D., and Professor E. Wilson Jones, FRCP, PRC-Path, special guests.
- May 4-5** – Orthopedic Seminar, St. Vincent Cooling Auditorium.
- May 10-12** – Midas Rex Institute Hands-on Orthopedic Workshop, Sheraton Marten House, Indianapolis.
- May 12** – Second Annual Progress in Cardiology, Westin Hotel.
- May 26** – Annual "500" Orthopedic meeting, St. Vincent Cooling Auditorium.

For more information, contact Marilyn Soltermann, CME coordinator, St. Vincent Hospital, 2001 W. 86th St., P.O. Box 40970, Indianapolis, IN 46240-0970.

University of Michigan CME

The University of Michigan Medical School will present two courses titled "Pediatric Advanced Life Support" and "The Restenosis Summit." Both courses will be given at the Towsley Center in Ann Arbor, Mich.

"Pediatric Advanced Life Support" will be held May 5 and 6. It will address the unique problems of children and newborns and focus on those situations most likely to result in cardiorespiratory arrest. The course was developed jointly by the American

Heart Association and the American Academy of Pediatrics.

"The Restenosis Summit" will be held May 11 and 12. This conference will focus on the future prospects and strategies for reducing recurrence after coronary angioplasty.

The fee for this program is \$350 for physicians and \$495 for corporate participants.

For more information about the two courses, contact Karen Brown or Debbie DeSmyther, Office of CME, G-1100 Towsley Center, Box 0201, University of Michigan Medical School, Ann Arbor, MI 48109 or call (313) 763-1400.

Methodist Hospital CME

Methodist Hospital will sponsor the following continuing medical education events for April and May:

- Apr. 21-22** – Advanced Trauma Life Support, Methodist Hospital, Wile Hall, Indianapolis.
- Apr. 28-29** – Primary Care Gynecology Workshop, Methodist Hospital, Auditorium and Wile Hall, Indianapolis.
- May 12** – 1989 Overview of Solid Organ Transplantation, Hyatt Regency, Indianapolis.
- May 18-19** – 24th Annual Batman Lecture, Methodist Hospital, Auditorium, Indianapolis.
- May 24** – Initial Management of Catastrophic Athletic Injuries, Methodist Hospital, Auditorium, Indianapolis.

For more information, call Dixie Estridge, CME Coordinator, Methodist Hospital of Indiana, at (317) 929-3733.

Indiana University CME

The Indiana University School of Medicine will sponsor the following CME courses for April and May:

- Apr. 20** – Sports Medicine, Reid Memorial Hospital, Richmond, Ind.
- Apr. 20-21** – 12th Annual Arthur B. Richter Conference: Post Traumatic Stress Disorders in Children and Adolescents, University Place Executive Conference Center and Hotel, Indianapolis.
- Apr. 21-23** – Advanced Trauma Life Support, Wishard Memorial Hospital, Indianapolis.
- Apr. 22** – Depression: Recognition and Treatment in Primary Medical Care Setting, Hilton-on-the-Circle, Indianapolis.
- Apr. 29** – I.U. School of Medicine 1989 Scientific Session, Van Nuys Science Building and Emerson Hall, I.U. School of Medicine campus.
- May 3-5** – New Developments in Neuroradiology, University Place Executive Conference Center and Hotel, Indianapolis.
- May 4-6** – Annual Meeting of the Indiana Chapter, American College of Surgeons, Evansville.
- May 9-11** – Family Practice Update – Part I 1989, I.U. Medical Center, Indianapolis.

For information, call Melody Dian, (317) 274-8353. □

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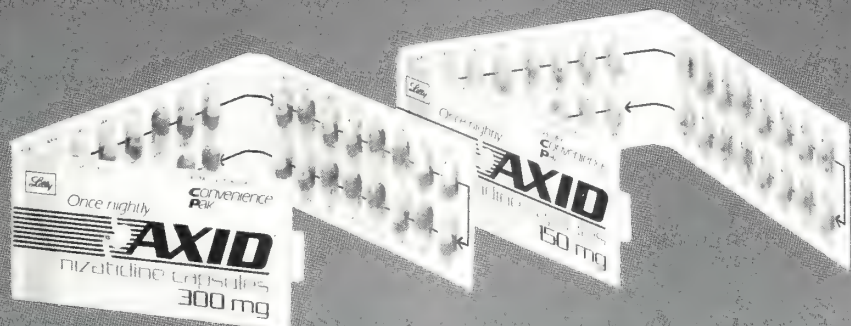
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Brief Summary

Consult the package literature for complete information

Indications and Usage Axid is indicated for up to eight weeks for the treatment of active duodenal ulcer. In most patients, the ulcer will heal within four weeks.

Axid is indicated for maintenance therapy for duodenal ulcer patients at a reduced dosage of 150 mg b.i.d. after healing of an active duodenal ulcer. The consequences of continuous therapy with Axid for longer than one year are not known.

Contraindication Axid is contraindicated in patients with known hypersensitivity to the drug and should be used with caution in patients with hypersensitivity to other H₂-receptor antagonists.

Precautions General – 1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Because nizatidine is excreted primarily by the kidney, dosage should be reduced in patients with moderate to severe renal insufficiency. 3. Pharmacokinetic studies in patients with hepatorenal syndrome have not been done. Part of the dose of nizatidine is metabolized in the liver. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

Laboratory Tests – False-positive tests for urobilinogen with Multistix® may occur during therapy with nizatidine.

Drug Interactions – No interactions have been observed between Axid and theophylline, chlordiazepoxide, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450-linked drug-metabolizing enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increases in serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility – A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mid liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid. Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, prenatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy – Teratogenic Effects – Pregnancy Category C – Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect, but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus and at 50 mg/kg it produced ventricular anomaly (distended abdomen), spinal bifida hydrocephaly and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers – Studies conducted in lactating women have shown that <0.1% of the administered oral dose of nizatidine is secreted in human milk in proportion to plasma concentrations. Caution should be exercised when administering nizatidine to a nursing mother.

Pediatric Use – Safety and effectiveness in children have not been established. Use in Elderly Patients – Ulcer healing rates in elderly patients are similar to those in younger age groups. The incidence rates of adverse events and laboratory test abnormalities are also similar to those seen in other age groups. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of nizatidine included almost 5,000 patients given nizatidine in studies of varying durations. Domestic placebo-controlled trials included over 1,900 patients given nizatidine and over 1,300 patients given placebo. Among reported adverse events in the domestic placebo-controlled trials, sweating (1% vs 0.2%), urticaria (0.5% vs < 0.01%), and somnolence (2.4% vs 1.3%) were significantly more common in the nizatidine group. A variety of less common events was also reported; it was not possible to determine whether these were caused by nizatidine.

Hepatic – Hepatocellular injury, evidenced by elevated liver enzyme tests (SGOT [AST], SGPT [ALT], or alkaline phosphatase), occurred in some patients and was possibly or probably related to nizatidine. In some cases, there was marked elevation of SGOT/SGPT enzymes (greater than 500 IU/L) and, in a single instance, SGPT was greater than 2,000 IU/L. The overall rate of occurrences of elevated liver enzymes and elevations to three times the upper limit of normal, however, did not significantly differ from the rate of liver enzyme abnormalities in placebo-treated patients. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular – In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS – Rare cases of reversible mental confusion have been reported.

Endocrine – Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to Axid. Impotence and decreased libido were reported with equal frequency by patients who received Axid and by those given placebo. Rare reports of gynecomastia occurred.

Hematologic – Fatal thrombocytopenia was reported in a patient who was treated with Axid and another H₂-receptor antagonist. On previous occasions, this patient had experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumental – Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity – As with other H₂-receptor antagonists, rare cases of anaphylaxis following administration of nizatidine have been reported. Because cross-sensitivity in this class of compounds has been observed, H₂-receptor antagonists should not be administered to individuals with a history of previous hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other – Hyperurcemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine administration have been reported.

Overdosage. Overdoses of Axid have been reported rarely. The following is provided to serve as a guide should such an overdose be encountered.

Signs and Symptoms – There is little clinical experience with overdosage of Axid in humans. Test animals that received large doses of nizatidine exhibited cholinergic-type effects, including lacrimation, salivation, emesis, miosis, and diarrhea. Single oral doses of 800 mg/kg in dogs and of 1,200 mg/kg in monkeys were not lethal. Intravenous median lethal doses in the rat and mouse were 301 mg/kg and 232 mg/kg, respectively.

Treatment – To obtain up-to-date information about the treatment of overdose, a good resource is your certified regional Poison Control Center. Telephone numbers of certified poison control centers are listed in the Physicians' Desk Reference (PDR). In managing overdose, consider the possibility of multiple drug overdoses, interaction among drugs, and unusual drug kinetics in your patient.

If overdosage occurs, use of activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance.

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A review of infections in day-care centers



David E. Van Reken, M.D.
John Gaebler, M.D.

A synopsis of the major infections that occur among children attending day-care centers (DCC) is provided. Infections caused by *Shigella* species, *Hemophilus influenza* type B, hepatitis A virus and cytomegalovirus represent four unique patterns of disease occurrence in DCC. An understanding of the vulnerabilities of children, parents and day-care workers enables physicians to detect and prevent the spread of certain infections.

Introduction

The number of infants and children in day-care settings has grown phenomenally in the past two decades and will continue to increase in the near future. Half of all mothers with children younger than 6 years of age are employed, and more than 60% of their children are cared for outside the home.

By 1990, there will be 10.5 million children younger than age 6 with employed mothers and 6.3 million children in out-of-home care.¹ In Indiana, there are approximately 1,400 to 2,100 day-care homes and more than 700 licensed DCC, ranging in size from 15 to 400 children.

Not only are there more children in DCC, but it is becoming clear that they experience more

infectious diseases than children reared at home. In a recent study from Pittsburgh, 73% of children in day care, compared with 29% of children in home care, had at least six infections in their first year of life. Children in DCC had an average of 96 days of illness per year, compared with 41 days for children in home care.²

DCC are major community reservoirs for certain contagious diseases including giardiasis, hepatitis A, shigellosis and head lice infestation. It is important for physicians who care for children to be aware of the risks for infectious diseases that accompany the decision by parents to place their children in DCC or group home care. This article will briefly review the infectious diseases associated with DCC (Table).

Patterns of disease spread

Four recognized patterns of disease occurrence caused by infectious agents in DCC can be identified. The first pattern is infectious agents that affect the children who attend, the employees of the DCC and close family members of both children and employees. Agents that fit this category include *Shigella*, *Giardia lamblia* and viruses that infect the respiratory tract, most importantly the respiratory syncytial virus.

The second pattern occurs when only the children attending the DCC become affected. Examples in this group include otitis media,

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The I.U. School of Medicine designates this CME activity for one credit hour in Category I of the Physician's Recognition Award of the American Medical Association.

To obtain Category I credit for this month's article, complete the quiz following this article.

Table
Major infections that may be transmitted in day care

<u>Mode of transmission</u>	<u>Bacteria</u>	<u>Viruses</u>	<u>Parasites</u>
Fecal-oral	<i>Shigella</i> <i>Salmonella</i> <i>Campylobacter</i> <i>Escherichia coli</i>	Rotaviruses Hepatitis A Enteroviruses	<i>Giardia lamblia</i> <i>Enterobius vermicularis</i> <i>Entamoeba histolytica</i> <i>Cryptosporidium</i>
Respiratory	<i>Bordetella pertussis</i> <i>Haemophilus influenzae</i> type B <i>Mycobacterium tuberculosis</i> Meningococcus	Measles Varicella Respiratory syncytial virus Adenovirus Influenza A & B Parainfluenza Rhinoviruses	
Person-to-person contact via skin contact	Group A streptococci Staphylococcus aureus	Herpes simplex	Pediculosis (<i>Pediculus humanus</i>) Scabies (<i>Sarcoptes scabiei</i>)
Other (contact with urine or saliva)		Cytomegalovirus	Tinea capitis Tinea corporis

• Reprinted with permission from the American Academy of Pediatrics.

varicella and *Hemophilus influenzae* type B diseases.

The third pattern consists of diseases occurring in the adult contacts of DCC attendees. Attendees usually have an asymptomatic infection while adult DCC employees or parents become ill. The classic example is hepatitis A.

The fourth pattern occurs when both the attendees of DCC and their adult contacts have an inconsequential infection, but there are serious health problems for the fetus of a pregnant contact. Historically, rubella fits this pattern, but the major concern today is the cytomegalovirus.

Gastrointestinal infections

The overall occurrence rate of diarrhea among children in DCC is 4.7 episodes per child-year.³ The three most prevalent etiologic

agents are *Giardia lamblia*, rotavirus and *Shigella* species. The presence of children in diapers significantly increases the chance of spreading gastroenteritis in the DCC.

DCC serve as the major reservoir for *Giardia lamblia* in the United States today. Surveys of DCC in Houston found one-third of all attendees excreted cysts at least once in an 18-month study.⁴ Asymptomatic children can harbor the protozoan and pass infective cysts for up to 14 months. During an outbreak of diarrhea due to *Giardia lamblia*, 17% to 39% of attendees and 7% to 25% of adult contacts become symptomatic. Treatment of all symptomatic individuals is recommended with a goal of parasitologic cure.

Available drugs have moderate efficacy (50% to 85%). Their dis-

advantages include poor tolerance, bitter taste, nausea, cramping, high cost and questionable safety. The chance of reinfection seems likely. The need to treat asymptomatic excretors of *Giardia lamblia* cysts is therefore arguable; we do not treat them. The infection in asymptomatic excretors seems to be well-tolerated and not associated with failure to thrive. The best ways to prevent the disease are attention to good hygiene and segregation of children and staff by age groups.⁵

Half of the diarrhea experienced by infants and children in the winter months is due to the rotavirus. The attack rate among attendees in a DCC experiencing a rotavirus diarrhea outbreak is 40% to 70%. A major contributing factor to the spread of rotavirus diarrhea is that children excrete

the rotavirus in their stools two to three days before they become symptomatic. Thirty-two percent continue to shed the virus in the first week and 12% in the second week after their diarrhea ceases.⁶ Oral attenuated rotavirus vaccines are being evaluated for safety and efficacy.

Of the enteric bacterial pathogens, *Shigella* species have produced the most diarrheal disease in DCC. In Indianapolis, from November 1987 to October 1988, there were 515 laboratory-confirmed cases of *Shigella* gastroenteritis, with one-third of the cases occurring in 22 different DCC.

Most of the early isolates in this outbreak were multiple-drug resistant *Shigella sonnei*, and approximately 10% of affected individuals required hospitalization.⁷ Two negative stool cultures are required of persons with *Shigella* gastroenteritis before they can be permitted to return to a DCC. Adult contacts of children with *Shigella* also are required by Indiana law to have two negative stool cultures if they are in high risk jobs such as food handlers, DCC employees or health care providers.

Other pathogens associated with DCC gastroenteritis include *Salmonella* species,⁸ *Cryptosporidium*⁹ and *Clostridium difficile*. Special concentration and staining techniques are required for the identification of *Cryptosporidium*. Laboratory personnel should be notified when this parasite is being considered as a possible cause of disease. A rapid latex agglutination test for *Clostridium difficile* antigens (which does not detect toxin) may be useful for screening stool specimens directly. Tissue culture assays with toxin

neutralization tests are required for confirmation of toxin production.¹⁰

Upper respiratory tract infections

The number of upper respiratory tract infections (URI) and middle ear infections among full-time DCC attendees is two to three times that of children reared at home. One-third of all URI and two-thirds of all ear infections among DCC attendees are directly attributable to DCC attendance.¹¹ In Pittsburgh, hospitalization for myringotomy and tube placement occurred in 21% of children in DCC and 3% of children in home care.² For both DCC attendees and nonattendees, the incidence of URI and ear infections decreases as the children get older.

Already, nearly a half million jobs are affected monthly by the need to care for sick children.

Infants and children with mild to moderately severe URI and ear infections can be managed without exclusion from the DCC. The considerations behind this statement include the following: 1) URI pathogens are frequently spread by asymptomatic individuals and usually have already been spread to close contacts in the incubation period of the URI; 2) transferring the child to another environment (relative's home, home day care, another DCC) merely increases the chances for other children being exposed to the URI pathogen; and 3) requir-

ing the working parent to stay home to take care of the ill child seven to 10 times per year would pose a tremendous economic burden on the parent. Already, nearly a half million jobs are affected monthly by the need to care for sick children.

Attendees at DCC are at increased risk for serious disease caused by *Hemophilus influenzae*, type B (HIB). For infants too young to be immunized against HIB disease, younger than 18 months old, the relative risk of attendees at DCC is 12.3, compared to nonattendees with respect to acquiring HIB disease.¹² The risk of a secondary case of HIB disease occurring in a DCC is 0% to 1.3%, which is lower than the secondary rate among household contacts, 2% to 4%.¹³

Rifampin prophylaxis in DCC is effective if used promptly with full compliance by attendees and DCC employees.¹⁴ When all contacts are older than 2, prophylaxis is not needed. If rifampin prophylaxis is instituted, it is not recommended for pregnant women but should be given to children in a cohort without regard for previous vaccination with any HIB vaccine.¹⁵

Hepatitis A

Among preschool children, hepatitis A infection is either asymptomatic or mild. Jaundice is not seen in 80% of infected children younger than 4 years of age. On the other hand, half of all adults are susceptible to hepatitis A, and 75% will become clinically ill with jaundice if infected.

DCC can be a major source of hepatitis A spread in the community. In Arizona, 42% of all reported cases of hepatitis A were either children attending DCC or

household contacts of attendees.¹⁶ DCC that enroll children younger than 2 years of age have a greater than 50% chance of disease spread, compared to a 10% risk of disease spread in DCC that enroll only children older than 2 years of age.

Gamma globulin, administered at the dose of 0.02 ml/kg intramuscularly, can ameliorate or prevent the disease in adult contacts if given soon after exposure. Therefore, when hepatitis A infection is diagnosed in an adult contact of a DCC attendee, the DCC director should be notified. The physician also is required by Indiana law to report hepatitis A to the local public health department. Only by epidemiologic investigation can the proper intervention (extent of gamma globulin use) be determined.

Cytomegalovirus

Between 50% and 90% of children who attend DCC acquire cytomegalovirus (CMV) infection with virtually no risk of sequelae.¹⁸ However, if the CMV is transmitted to a seronegative pregnant mother or DCC employee, the fetus has a 5% to 15% chance of being born with cytomegalic inclusion disease and suffering permanent neurological damage. Children who acquire CMV infection after birth are usually asymptomatic but shed the virus in their urine and saliva for an average of nine months. Fathers, mothers and care-givers of children attending a DCC frequently acquire the infection and shed DCC-associated strains of the CMV in their urine.¹⁹

Women of child-bearing age should be warned of the risk of CMV disease as they enroll their child in a DCC, as should women

who seek employment in a DCC. They should be counseled to have a serologic screening test for antibody to CMV if they are planning a pregnancy in the near future. Seronegative women planning a pregnancy should not work in a DCC and should practice careful hygiene with infants or children who are potential CMV shedders.

AIDS

Human immunodeficiency virus (HIV) infection is not acquired through casual contact such as the contact occurring in classrooms or in normal adult-child interaction. HIV infection has not been transmitted in the foster home setting or in DCC. It is not recommended that routine screening for HIV antibodies be done on DCC attendees or employees.

Nevertheless, DCC cannot avoid some issues regarding acquired immunodeficiency syndrome (AIDS). Whether or not to enroll a known HIV-positive infant or child should be an individual, case-by-case decision.

An HIV-positive child without open sores and with good bowel and bladder control is not in danger of transmitting HIV infection to fellow attendees. The child should have teachers and care-givers who are aware of the HIV status and who respect the child's and the family's rights to privacy. Only those people who need to know should know.

Rather than the concern about

**Therefore,
when hepatitis A infection is diagnosed
in an adult contact of a DCC attendee,
the DCC director should be notified.**

the spread of HIV infection in the day-care setting, greater interest should be shown in decreasing the exposure of the child with AIDS to the plethora of infectious agents that congregate in DCC.

Concluding challenge

Children enrolled in a DCC have an increased risk for a wide variety of infectious diseases. Health care professionals need to be aware of the DCC status of the children in their practice and should be prepared to counsel parents about coping with various DCC-associated infections.

DCC provide essential services to the children of many families in our society. Health care professionals have an opportunity to improve communication with DCC and families. Through education, the risks of infectious diseases can be reduced. With physician input, neighborhood DCC can become focal points of health education for large numbers of children and their families. □

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■ drug names

Look-alike and sound-alike drug names

	CLOFAZIMINE	CLONAZEPAM
Category:	Leprostatic	Anticonvulsant
Brand name:	Lamprane, Geigy	Klonopin, Roche
Generic name:	Clofazimine	Clonazepam
Dosage forms:	Capsules	Tablets
	TREXAN	TRANXENE
Category:	Antidote	Antianxiety agent
Brand name:	Trexan, DuPont	Tranxene, Abbott
Generic name:	Naltrexone HCl	Clorazepate dipotassium
Dosage forms:	Tablets	Tablets

Benjamin Teplitzky, R. Ph.
Brooklyn, N.Y.

Look-alike and sound-alike drug names can be misinterpreted by a nurse reading doctors' orders or by a pharmacist compounding physicians' prescriptions.

Such misunderstandings can result in the administration of a drug not intended by the prescriber. Awareness of such look-alike and sound-alike drug names can reduce potential errors. □

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CARDIZEM is contraindicated in: (1) patients with sick sinus syndrome except in the presence of a functioning ventricular pacemaker; (2) patients with second- or third-degree AV block except in the presence of a functioning ventricular pacemaker; (3) patients with hypotension (less than 90 mm Hg systolic); (4) patients who have demonstrated hypersensitivity to the drug; and (5) patients with acute myocardial infarction and pulmonary congestion documented by x-ray on admission.

WARNINGS

- Cardiac Conduction** CARDIZEM prolongs AV node refractory periods without significantly prolonging sinus node recovery time, except in patients with sick sinus syndrome. This effect may rarely result in abnormally slow heart rates (particularly in patients with sick sinus syndrome) or second- or third-degree AV block (nine of 2,111 patients or 0.43%). Concomitant use of diltiazem with beta-blockers or digitalis may result in additive effects on cardiac conduction. A patient with Prinzmetal's angina developed periods of asystole (2 to 5 seconds) after a single dose of 60 mg of diltiazem.
- Congestive Heart Failure** Although diltiazem has a negative inotropic effect in isolated animal tissue preparations, hemodynamic studies in humans with normal ventricular function have not shown a reduction in cardiac index nor consistent negative effects on contractility (dp/dt). An acute study of oral diltiazem in patients with impaired ventricular function (ejection fraction 24%–6%) showed improvement in indices of ventricular function without significant decrease in contractile function (dp/dt). Experience with the use of CARDIZEM (diltiazem hydrochloride) in combination with beta-blockers in patients with impaired ventricular function is limited. Caution should be exercised when using this combination.
- Hypotension** Decreases in blood pressure associated with CARDIZEM therapy may occasionally result in symptomatic hypotension.
- Acute Hepatic Injury** Mild elevations of transaminases with and without concomitant elevation in alkaline phosphatase and bilirubin have been observed in clinical studies. Such elevations were usually transient and frequently resolved even with continued diltiazem treatment. In rare instances, significant elevations in enzymes such as alkaline phosphatase, LDH, SGOT, SGPT, and other phenomena consistent with acute hepatic injury have been noted. These have occurred during early therapy (day 1 to 10 weeks) and have been reversible upon discontinuation of drug therapy. The relationship to CARDIZEM is uncertain in some cases, but probable in some. (See PRECAUTIONS.)

PRECAUTIONS

General CARDIZEM (diltiazem hydrochloride) is extensively metabolized by the liver and excreted by the kidneys and in bile. As with any drug given over prolonged periods, laboratory parameters should be monitored at regular intervals. The drug should be used with caution in patients with impaired renal or hepatic function. In subacute and chronic dog and rat studies designed to produce toxicity, high doses of diltiazem were associated with hepatic damage. In special subacute hepatic studies, oral doses of 125 mg/kg and higher in rats were associated with histological changes in the liver which were reversible when the drug was discontinued. In dogs, doses of 20 mg/kg were also associated with hepatic changes, however, these changes were reversible with continued dosing. Dermatological events (see ADVERSE REACTIONS section) may be transient and may disappear despite continued use of CARDIZEM. However, skin eruptions progressing to erythema multiforme and/or exfoliative dermatitis have also been infrequently reported. Should a dermatologic reaction persist, the drug should be discontinued.

Drug Interaction Due to the potential for additive effects, caution and careful titration are warranted in patients receiving CARDIZEM concomitantly with any agents known to affect cardiac contractility and/or conduction. (See WARNINGS.)

When used in combination with beta-blockers or digitalis, caution should be exercised when using beta-blockers or digitalis concomitantly with CARDIZEM. (See WARNINGS.)

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may require adjustment when starting or stopping concomitantly administered CARDIZEM to maintain optimum therapeutic blood levels.

Beta-blockers: Controlled and uncontrolled domestic studies suggest that concomitant use of CARDIZEM and beta-blockers or digitalis is usually well tolerated, but available data are not sufficient to predict the effects of concomitant treatment in patients with left ventricular dysfunction or cardiac conduction abnormalities.

Administration of CARDIZEM (diltiazem hydrochloride) concomitantly with propranolol in five normal volunteers resulted in increased propranolol levels in all subjects and bioavailability of propranolol was increased approximately 50%. If combination therapy is initiated or withdrawn in conjunction with propranolol an adjustment in the propranolol dose may be warranted. (See WARNINGS.)

Cimetidine: A study in six healthy volunteers has shown a significant increase in peak diltiazem plasma levels (58%) and area-under-the-curve (53%) after a 1-week course of cimetidine at 1,200 mg per day and diltiazem 60 mg per day. Ranitidine produced smaller, nonsignificant increases. The effect may be mediated by cimetidine's known inhibition of hepatic cytochrome P-450, the enzyme system probably responsible for the first-pass metabolism of diltiazem. Patients currently receiving diltiazem therapy should be carefully monitored for a change in pharmacological effect when initiating and discontinuing therapy with cimetidine. An adjustment in the diltiazem dose may be warranted.

Digitalis: Administration of CARDIZEM with digoxin in 4 healthy subjects increased plasma digoxin concentrations approximately 20%. Another investigator found no increase in digoxin levels in 12 patients with coronary artery disease. Since there have been conflicting results regarding the effect of digoxin levels, it is recommended that digoxin levels be monitored when initiating, adjusting, and discontinuing CARDIZEM therapy to avoid possible over- or under-digitalization. (See WARNINGS.)

Anesthetics: The depression of cardiac contractility, conductivity and automaticity as well as the vascular dilation associated with anesthetics may be potentiated by calcium channel blockers. When used concomitantly, anesthetics and calcium blockers should be titrated carefully.

Carcinogenesis, Mutagenesis, Impairment of Fertility. A 24-month study in rats and a 21-month study in mice showed no evidence of carcinogenicity. There was no evidence of mutagenicity in Ames test. No impairment of fertility was observed in rats.

Pregnancy Category C. Reproduction studies have been conducted in mice, rats, and rabbits. Administration of doses ranging from five to ten times greater (on a mg/kg basis) than the daily recommended therapeutic dose has resulted in embryonic and fetal mortality. The incidence of resorptions has been reported to cause skeletal abnormalities. In the perinatal postnatal studies, there was some reduction in early individual pup weights and survival rates. There was an increased incidence of stillbirths at doses of 20 times the human dose or greater. There are no known adverse effects on pregnant women; therefore, use of CARDIZEM in pregnant women only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers. Diltiazem is excreted in human milk. The reported levels that concentrations in breast milk may approximate serum levels. If use of CARDIZEM is deemed essential, an alternative method of infant feeding should be instituted.

Pediatric Use. Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Serious adverse reactions have been rare in studies carried out to date, but it should be recognized that patients with impaired ventricular function and cardiac conduction abnormalities have usually been excluded from these studies.

The adverse events described below represent events observed in clinical studies of hypertensive patients receiving either CARDIZEM Tablets or CARDIZEM SR Capsules as well as experiences observed in studies of angina and during market use. The most common events in hypertension studies are shown in a table with relative frequency (greater than 1%) and less than 1% are listed below. The following body system, these include any adverse reactions seen in angina studies that were not observed in hypertension studies. In all hypertensive patients studied (over 900), the most common adverse events were edema (9%), headache (8%), dizziness (6%), asthenia (5%), sinus bradycardia (3%), flushing (3%), and 1° AV block (3%). Only edema and perhaps bradycardia and dizziness were dose related. The most common events observed in clinical studies (over 2,100 patients) of angina patients and hypertensive patients receiving CARDIZEM Tablets or CARDIZEM SR Capsules were (ie, greater than 1%): edema (5.4%), headache (4.5%), dizziness (3.4%), asthenia (2.8%), 1° degree AV block (1.8%), flushing (1.7%), nausea (1.6%), bradycardia (1.5%), and rash (1.5%).

DOUBLE BLIND PLACEBO CONTROLLED HYPERTENSION TRIALS

Adverse	Diltiazem N=315 # pts (%)	Placebo N=211 # pts (%)
Headache	38 (12%)	17 (8%)
AV block first degree	24 (7.6%)	4 (1.9%)
dizziness	22 (7%)	6 (2.8%)
edema	19 (6%)	2 (0.9%)
bradycardia	19 (6%)	3 (1.4%)
ECG abnormality	13 (4.1%)	3 (1.4%)
asthenia	10 (3.2%)	1 (0.5%)
constipation	5 (1.6%)	2 (0.9%)
hypotension	4 (1.3%)	1 (0.5%)
nausea	4 (1.3%)	2 (0.9%)
palpitations	4 (1.3%)	2 (0.9%)
polyuria	4 (1.3%)	2 (0.9%)
somnolence	4 (1.3%)	
weight increase	3 (1%)	1 (0.5%)
hypotension	3 (1%)	1 (0.5%)
insomnia	3 (1%)	1 (0.5%)
rash	3 (1%)	1 (0.5%)
AV block second degree	2 (0.6%)	

In addition, the following events were reported infrequently (less than 1%) or have been observed in angina trials, in many cases, the relation to drug is uncertain.

- Cardiovascular:** Angina, arrhythmia, bundle branch block, tachycardia, ventricular extrasystoles, congestive heart failure, syncope.
- Nervous System:** Amnesia, depression, gait abnormality, hallucinations, nervousness, paresthesia, personality change, tremor, abnormal dreams.
- Gastrointestinal:** Anorexia, diarrhea, dysgeusia, mild elevations of SGOT, SGPT, and LDH (see hepatic warnings), vomiting, weight increase, thirst.
- Dermatological:** Petechiae, pruritus, photosensitivity, urticaria.
- Other:** Amblyopia, CPK increase, dyspnea, epistaxis, eye irritation, hyperglycemia, sexual difficulties, nasal congestion, nocturia, osteoarthralgia, pain, impotence, dry mouth.

The following postmarketing events have been reported infrequently in patients receiving CARDIZEM: alopecia, gingival hyperplasia, erythema multiforme, and leukopenia. Definitive cause and effect relationship between these events and CARDIZEM therapy cannot yet be established.

Issued 1-89

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Infections in day-care centers

1. Which virus is responsible for up to half of all the episodes of diarrhea occurring among infants in the winter months?
 - a. Cytomegalovirus
 - b. Rotavirus
 - c. Adenovirus
 - d. Norwalk agent
2. Which viral pathogen occurring commonly in day-care centers (DCC) is not a health risk for children or adults, but is for the fetus?
 - a. Cytomegalovirus
 - b. Parainfluenza
 - c. Respiratory syncytial virus
 - d. Enteroviruses
3. HIV-positive children older than 3 years of age are likely to transmit the HIV virus to fellow attendees in the DCC setting.
 - a. true
 - b. false
4. All of the following statements about giardiasis are true EXCEPT which one?
 - a. DCC are the major reservoirs of *Giardia lamblia* in the United States today.
 - b. Children with giardiasis can experience abdominal discomfort, diarrhea, increased flatulence and anorexia.
 - c. The trophozoites passed during the acute diarrheal stage of the illness are highly infectious.
 - d. Cysts often are intermittently shed in the stools of asymptomatic children with giardiasis.
5. When a preschool aged child, who usually attends a certain DCC, has a mild upper respiratory illness characterized by cough, rhinorrhea and rectal temperature of 100°F, he/she should be excluded from the DCC to decrease the spread of contagious disease.
 - a. true
 - b. false
6. Which of the following statements about disease caused by *Hemophilus influenzae* type B (HIB) in the DCC setting is true?
 - a. Invasive HIB disease is more likely to appear in an infant or child who attends a DCC where another child has recently experienced invasive HIB disease than in an infant or child attending a DCC where no one has recently had HIB disease.
 - b. Invasive HIB disease no longer occurs in children older than 18 months after they have had their conjugated HIB vaccine.
 - c. Rifampin prophylaxis should be given, even if all contacts at a DCC are older than 2 years.
 - d. Children older than 18 months who have received the conjugated HIB vaccine need not receive rifampin prophylaxis.
7. Which viral disease has never been documented to be transmitted in a day-care or school setting?
 - a. Otitis media
 - b. Varicella
 - c. AIDS
 - d. Herpes simplex
8. What percent of children with *Shigella* gastroenteritis will require inpatient therapy?
 - a. 5
 - b. 10
 - c. 15
 - d. 20
9. Which disease has a fecal-oral mode of transmission and is mainly a health risk for adult contacts of children who attend DCC?
 - a. Hepatitis A
 - b. Coxsackie carditis
 - c. Streptococcal pharyngitis
 - d. Pinworms
10. The following pieces of advice are appropriate for a young woman who seeks employment at a DCC EXCEPT:
 - a. Have a physician test your CMV status if you plan to become pregnant soon.
 - b. Be sure to wash your hands thoroughly between contacts with each child at the DCC.
 - c. Have an AIDS antibody test before employment.
 - d. Have a general physical examination and a TB screening test before employment.

Answer sheet for CME quiz

I wish to apply for one hour of Category I AMA Continuing Medical Education credit through the I.U. School of Medicine. I have read the article and answered the quiz on this answer sheet. I understand my answer sheet will be graded confidentially, at no cost to me, and notification of my successful completion of the quiz (80% of the questions answered correctly) will be directed to me for my application for the Physician Recognition Award of the American Medical Association. I also understand that if I do not answer 80% of the questions correctly, I will not be advised of my score, but the answers will be published in the next issue of INDIANA MEDICINE.

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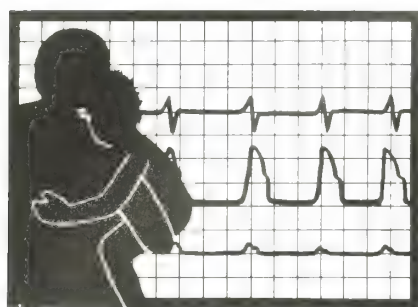
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Answers (circle one)

1. a b c d
2. a b c d
3. a b
4. a b c d
5. a b
6. a b c d
7. a b c d
8. a b c d
9. a b c d
10. a b c d

To be eligible for this month's quiz, send your completed, signed application before May 10, 1989, to the address appearing at the top of this page.

Managing tonic-clonic status epilepticus in children



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Bradford R. Hale, M.D.
Thomas M. Williams, M.D.
Indianapolis

Status epilepticus (SE) is defined as a single seizure lasting longer than 30 minutes or seizures so frequent that the patient does not recover to an alert state between attacks and appears to be having one long seizure.¹

The largest single group of patients having SE is patients with epilepsy who suffer an acute exacerbation. SE occurs in 4% to 10% of all patients with epilepsy.^{2,3} Some will have had recent adjustments in the anticonvulsant regimen, but 15% to 20% will have drug levels in the therapeutic range.¹

Other causes of SE include infection, head trauma, neoplasm, anoxia, metabolic disorders and toxins. SE generally is seen in younger children; 60% to 75% are younger than the age of 3.^{2,4} In general, 50% of episodes will be idiopathic and 50% will have a definable cause. The chances of discovering an etiology decrease with age. Of children older than 3, only 28% will have had an acute central nervous system (CNS) injury, but in children under the age of 1, 75% will have had a CNS insult. Patients in this younger age group may deserve a more extensive diagnostic workup.⁴

SE is potentially brain damaging

and life threatening. It has a mortality rate of 6% to 18%, which varies with seizure duration. In one group of patients, SE lasting less than 30 minutes carried less than a 5% mortality rate, while mortality was 30% in patients whose seizures lasted longer than one hour.⁵

Physiologic changes in SE

Cerebral metabolic changes can occur after as little as 20 minutes of tonic-clonic activity. The partial pressure of oxygen in the cerebral cortex falls, producing regional hypoxia, which leads to nerve cell damage.⁶ In animals, permanent damage to the hippocampus, amygdala, cerebellum and middle cortical layers occurs after one hour of clinical seizure activity.⁷ Accumulation of certain fatty acids and an increase in neuronal calcium also may occur during prolonged electrical seizure activity. The toxic effects of these changes include microvacuolization and dissolution of nerve cells and astrocyte swelling.⁷

Hyperpyrexia and metabolic acidosis are common sequelae of SE. The severity of metabolic acidosis has not been correlated with the development of brain damage, but the degree of brain damage is proportional to the degree of temperature elevation. Endogenous catecholamine levels may increase markedly, causing both cardiac arrhythmias and neurogenic pulmonary edema.⁷

A blood leukocytosis is commonly seen in SE with counts as high as 12,000 to 28,000 cubic ml. Band forms are rare, however, and may help in differentiating whether a leukocytosis is from seizure or infection. A mild spinal fluid pleocytosis, along with an increase in spinal fluid protein, is seen occasionally secondary to SE. One study documents spinal fluid white blood cell counts as high as 12/cubic mm and reports another study in which counts as high as 80/cubic mm were seen in the post-ictal state.⁸ It is prudent, however, to observe closely a child with spinal fluid pleocytosis or treat with antibiotics until one is certain the patient does not have meningitis.

Other metabolic changes affecting many organ systems can occur and are outlined in *Table 1*.

Management

A brief history and physical should be done to elicit possible causes of the seizure. Past history of seizure disorder and recent changes in anticonvulsant medication are important points. Recent history should focus on the possibility of infection, toxin or trauma. A history of a diet deficient in pyridoxine (e.g., powdered goat's milk) might suggest the rare cause of pyridoxine deficiency as the cause of the seizures.³ Physical exam is important for signs of trauma or pre-existing neurologic disease. Examination of the head (size, palpation for fractures), optic fundi (papilledema) and skin (tuberous sclerosis, neurofibromatosis, Sturge-Weber disease) and for congenital anomalies may suggest a cause.

Laboratory evaluation may include blood glucose, electrolytes, calcium, magnesium, blood urea

nitrogen, toxicology screen and serum anticonvulsant levels. Levels of hepatic enzymes and ammonia may be useful, particularly in infants. If the history suggests infection, blood should be drawn for culture. If a lumbar puncture is indicated, it should be delayed until the patient is stable from a hemodynamic and respiratory standpoint. If there is strong suspicion of meningitis, antibiotic therapy should be initiated rapidly and should not be held until after the lumbar puncture. It is always preferable to have spinal fluid cultures before the first dose

of antibiotics. However, if the spinal tap places the unstable patient at further risk, it is advisable to treat first and perform the spinal tap when the patient is more stable.

The dose of antibiotics will not significantly alter the spinal fluid cell count nor the Gram stain. Computed tomography (CT) and magnetic resonance imaging (MRI) scans may be useful if the seizure is focal or if trauma is suspected. If there is a family history of seizures and sudden cardiac death, an electrocardiogram should be done to detect the

Table 1

Medical complications of status epilepticus

Cardiovascular complications	Tachycardia, bradycardia Cardiac arrest Cardiac failure Hypertension Hypotension, shock
Respiratory system failure	Apnea Tachypnea Aspiration Pneumonia Respiratory acidosis Cyanosis
Renal failure	Oliguria, uremia Acute tubular necrosis Rhabdomyolysis
Autonomic system disturbances	Hyperpyrexia Excessive sweating, vomiting Hypersecretion (salivary, tracheal) Airway obstruction
Metabolic/biochemical abnormalities	Acidosis (metabolic, lactate) Anoxemia Hypernatremia Hyponatremia Hyperkalemia Hypoglycemia

presence of a prolonged Q-T interval.⁹

As with any other serious acute illness, the first treatment priority is airway maintenance and administration of 100% oxygen. The patient should be positioned to avoid aspiration, suffocation or physical injury. A soft nasal airway may be useful, but the forced use of an oral airway, tongue blade or metal object may cause severe oral injury and should be avoided. If poor ventilation is suspected or expected (due to medication), the patient should be intubated. A rapid sequence technique with short acting muscle relaxants is preferred so the patient can be intubated rapidly and safely and without the risk that ongoing seizure activity will be obscured by long-term neuromuscular paralysis. *Table 2* lists a protocol for this method. Monitoring should include heart rate, noninvasive blood pressure determination and pulse oximetry, if available.

To definitively control the seizure activity, a therapeutic concentration of a long-acting anti-convulsant must be achieved. The timing, route and vigor of therapy are the most important factors that will affect the duration of the seizure and subsequent morbidity.

A secure intravenous line should be placed, and if hypoglycemia is suspected, or confirmed by rapid test, then 0.5 to 1 gram/kg body weight (2 to 4 cc/kg of 25% dextrose) should be administered. Anticonvulsant drugs then can be given. The three most common classes of drugs used to control seizures are benzodiazepenes, phenytoin and barbiturates.

Diazepam is the most common first-line drug used for seizure control. High central nervous

Table 2

**Suggested drugs
to facilitate intubation**

Sedation: Valium, 0.1 to 0.2 mg/kg, or lorazepam, 0.1 mg/kg.

Paralysis: Atracurium, 0.4 to 0.5 mg/kg, or vecuronium, 0.2 mg/kg.

system levels are achieved rapidly. It has relatively low toxicity and is effective for many types of seizures. The activity of diazepam is rapidly achieved but of short duration. Adequate serum levels are produced in one to two minutes but decrease by 50% over 20 minutes. The usual dose is 0.3 to 0.5 mg/kg over two minutes up to 10 mg maximum dose. This dose may be repeated in 10 to 15 minutes if seizures persist. Side effects include sedation, respiratory depression (especially if barbiturates are given) and hypotension.

A second benzodiazepene, lorazepam, has become widely accepted in the treatment of SE.^{10,11} Lorazepam produces its peak effect in 45 to 60 minutes, but onset of clinical effectiveness is within three to five minutes. The usual dose is 0.05 to 0.2 mg/kg with the average being 0.1 mg/kg. The chief advantage of lorazepam over diazepam is its longer duration of action with seizure control generally lasting two to eight hours. The major side effect is drowsiness, but respiratory depression, bradycardia and hypotension are less common than

with diazepam.

Since the benzodiazepenes may not control the seizure for a prolonged time, another agent usually is added. Phenytoin is extremely effective for tonic-clonic status. It has a relatively long-half-life and produces equal blood and brain levels at three minutes. At 20 minutes, brain levels exceed blood levels.

Phenytoin should be given as close to the IV catheter as possible. The initial dose is 15 to 25 mg/kg at a rate of 0.5 to 1 mg/kg/minute or 50 mg/minute in an adult. Phenytoin is mixed in propylene glycol, which is cardiotoxic. Administration can cause bradycardia or hypotension. It is therefore necessary to administer the drug cautiously with heart rate and blood pressure monitoring.

The loading dose of phenytoin will produce effective blood levels for a prolonged time and maintenance doses can be started 12 to 24 hours later. The therapeutic level is in the range of 15 to 20 micrograms/mL. Phenytoin is not sedating, which makes it ideal in patients whose mental status when not having a seizure is in question.

Phenobarbital has a long history of usage in seizure disorders and is still quite useful because of effectiveness and widespread familiarity with its use. It is slowly absorbed by the brain parenchyma and can require 10 to 20 minutes to take effect. It can cause hypotension and respiratory depression. When used with diazepam, it almost uniformly causes apnea. Intubation before the use of this combination should be considered. The usual dose of phenobarbital is 15 to 20 mg/kg given at 0.5 mg/kg/minute.

Several other modalities can be

Management of status epilepticus

Monitor-Pulse
Blood pressure
Pulse oximeter

Airway-100% oxygen
(?) ET tube

Labs
Electrolytes
Calcium
Rapid glucose
Toxic screen
BUN

Establish secure IV access

Glucose (1 gm/kg) if hypoglycemic or small child (<1 year)

Give Valium – 0.3 mg/kg or Lorazepam – 0.1 mg/kg
Give Dilantin – 18-20 mg/kg to max 1 gram
(give slowly — monitor blood pressure)

If febrile
Rectal Tylenol
(?) Cooling blanket
(?) Iced saline lavage
(?) Evaporative cooling

If still seizing
Phenobarbital - 20 mg/kg
(airway control needed)

If seizures persist:
• Consider increased phenobarbital
• Barbiturate coma
• General anesthesia
• Paraldehyde
• Neuromuscular blockade

Figure 1

tried if the usual medications are not effective. If they are necessary, they should be used by medical personnel familiar with their use in a tertiary setting.

Paraldehyde can be used as an IV drug. It is made up as a 4% solution (20 ml of paraldehyde in 500 cc of 0.9% saline). The therapeutic dose is 0.1 to 0.2 mL/kg/hour. The solution should be

mixed in glass bottles and the tubing changed every 12 hours. It is contraindicated in patients with pulmonary edema, acidosis, hepatitis, nephrosis or bleeding tendency.

Very high dose phenobarbital or barbiturate coma with frequent or continuous dosing of short-acting barbiturates also may be used. This mode of therapy requires

rigorous hemodynamic monitoring and staff able to manage the complications of this regimen, as high dose barbiturates very commonly cause profound hypotension.

General anesthesia also can be used, as well as pharmacologic neuromuscular paralysis. Paralysis obviously stops only the somatic expression of the seizure and will prevent acidosis. Paralysis only partially controls the hyperpyrexia. If paralysis is used, the patient must have continuous electroencephalographic monitoring so that definitive anticonvulsant therapy can be continued and effectiveness monitored.

If laboratory evaluation confirms an electrolyte abnormality, this should be corrected. Hypocalcemia can be corrected with 10 to 20 mg/kg of calcium chloride given slowly for 15 to 30 minutes. Hyponatremia occasionally may cause seizures, and its therapy is controversial.

Recent reports link devastating neurological consequences with the rapid correction of hyponatremia.^{12,13} This appears to be more common in patients with chronic hyponatremia, e.g. adults on diuretic therapy, than in patients with acute hyponatremia, such as a child with water intoxication during gastrointestinal illness. It therefore seems that rapid correction in the acutely hyponatremic child to a sodium level not usually associated with causing seizures (115 to 120 mEq/L) is probably safe, but if the patient is chronically hyponatremic, slow correction in the range of 0.5 mEq/L/hour is more appropriate and does not contribute to neurologic damage.¹⁴ Review of the literature does not permit firm guidelines, and judgment must be used in each case.

Status epilepticus is a life-threatening event. Prompt evaluation and treatment are needed to produce a good outcome. A basic outline of the management of SE is given in Figure 1. □

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For more information, contact Denise Le Doux, PPS coordinator, Indiana State Medical Association, (317) 925-7545 or 1-800-382-1721.

March CME quiz answers

The following letters are the answers to the CME quiz that appeared in the March 1989 issue: "Lambert-Eaton Myasthenic Syndrome."

- | | |
|------|-------|
| 1. b | 6. e |
| 2. c | 7. d |
| 3. d | 8. a |
| 4. b | 9. a |
| 5. c | 10. b |



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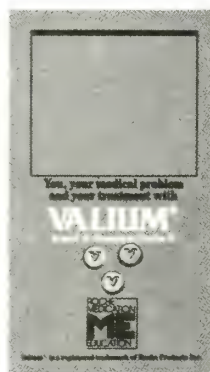
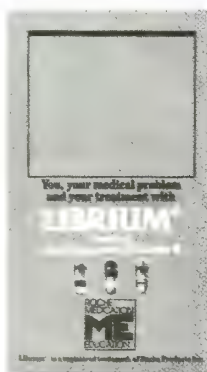
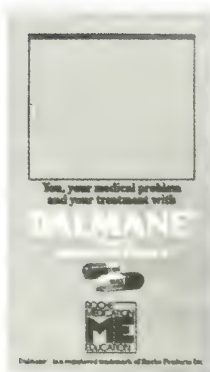


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Radiology Clinic:

Ulcerated, swollen finger: Rule out osteomyelitis

James D. Lutz, M.D.
Robert Holden, M.D.
Indianapolis

The patient is a 31-year-old man with a history of chronic psychiatric problems who has had a swollen middle finger for as long as he can remember. He suffered some relatively minor trauma to

his hand four weeks before presentation and now complains of ulceration and increasing pain in his swollen finger.

Physical examination reveals a markedly swollen, right third digit with erythema, induration, extreme tenderness to palpation and "pulsing" pain. An ulcer crater measuring 3.5 x 2.5 cm is present along the lateral aspect of

the proximal interphalangeal joint. A purulent exudate is also present within the ulcer crater. The ipsilateral axillary lymph nodes are enlarged. His affected extremity is neurologically intact with normal pulses. He is afebrile and his physical examination is otherwise unremarkable.

Plain radiographs of the hand were obtained to exclude the pres-



Figure 1: Plain film of hand.



Figure 2: Subtraction angiogram film of hand.

ence of osteomyelitis. An angiogram also subsequently was obtained. A scout film showing the bony changes and a representative subtraction film in the mid-arterial phase are shown.

Given the patient's history, physical examination and radiographic findings, what is your diagnosis?

Diagnosis

1) Congenital arteriovenous malformation of the third finger; 2) cellulitis with superficial ulceration; and 3) no radiographic evidence of acute osteomyelitis.

Radiographic findings

The plain radiograph demonstrates overgrowth and cortical thickening in the proximal and middle phalanges of the third digit. An alteration is located in the diaphyseal cortical margin as well, with contour irregularity and increased radiodensity. The trabeculae are increased in size. No periosteal new bone formation is present. There is marked soft tissue swelling, and the superficial ulceration is visible.

The second film demonstrates enlargement of the ulnar and third digital arteries with an hypertrophied capillary bed fed by enlarged, tortuous arterioles.

Early filling of the enlarged draining veins is also noted.

Discussion

Arteriovenous malformations (AVMs) are abnormal, persistent vascular embryonic remnants. During early embryologic development, future arteries and veins normally communicate directly. As capillary differentiation occurs, the persistence of these direct channels leads to the clinical manifestation of AVM.

Anatomically, three principal types of arteriovenous malformation can be identified. The first type is characterized by enlarged feeding arteries with increased numbers of arterioles. There is A-V shunting with early appearance of draining veins angiographically. These are usually located in the extremities, although they may occur in any organ.

The second type is often referred to as a capillary AVM and shows normal-sized feeding vessels, no early draining veins and intense capillary staining. No physiologically significant A-V shunting is present.

The final type is a venous angioma, which demonstrates normal sized arteries and capillaries, but enlarged tortuous veins that are best demonstrated by

retrograde venography.

Angiography is helpful in the characterization of these lesions even though the clinical diagnosis may be obvious. The arterial supply, type of malformation, degree of capillary shunting and anatomic extent of the lesion affect the therapeutic treatment options. Surgical resection and radiologic transcatheter intravascular embolization for ablation should be considered. Follow-up angiogram post therapy is also indicated to assess the adequacy of treatment and to evaluate for recurrence. □

From the Department of Radiology, Indiana University School of Medicine, Indianapolis, Ind.

Section editor: Robert D. Tarver, M.D., Director of Chest Imaging, Wishard Memorial Hospital, Indianapolis, Ind.

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Lyme disease: A review and an outlook for Indiana

Robert R. Pinger, Ph.D.
Robert H. Hamm, M.D.
Michael J. Sinsko, Ph.D.

In the October 1985 issue of *INDIANA MEDICINE*, an article titled "Lyme Disease" was reprinted from the *Delaware Medical Journal*.¹ Several developments have occurred in the three and a half years since that article appeared that necessitate a more detailed report on this disease and its significance for Indiana physicians.

Two of the more important developments are the recognition of two confirmed and five probable cases of the disease in Indiana residents in the last two years and the recovery of four *I. dammini* ticks from Indiana deer in 1987.

In this article, the authors review the history, clinical features and current status of Lyme disease in the United States and the Midwest. They also discuss the prospects for Lyme disease transmission in Indiana, based on its natural history, and offer recommendations for treatment.

Background

Lyme disease is a systemic, tick-borne illness with protean manifestations, including dermatologic, articular, neurologic and cardiac abnormalities. The current case definition for Lyme disease has been proposed by Ciesielski *et al*.² *Borrelia burgdorferi*, the spirochete causing the disease, appears simi-

lar to another spirochete, *Treponema pallidum*, in its potential to survive in the untreated human host for prolonged periods of time and to cause disease in various organ systems, in some instances after months or years of clinical latency.³ Lyme disease usually begins with a migratory skin lesion called erythema chronicum migrans (ECM). This lesion was first described by the Swedish physician, Arvid Afzelius, who found the condition in 1909, in a patient bitten by the ixodid tick, *Ixodes ricinus*.⁴ In the United States, ECM first was reported from Wisconsin by Scrimanti in 1970⁵ and subsequently in New England during investigations of an outbreak of an unusual arthritic disorder in Old Lyme, Lyme and East Haddam, in southeastern Connecticut.⁶ Studies of the cases from the Lyme, Conn., areas elucidated the multitude of symptoms that characterize disseminated Lyme disease.

Although the etiologic agent for the disease was not known at the time the disease syndrome was described, evidence pointed toward a pathogen transmitted by ticks of the genus *Ixodes*.^{7,8,9} In 1982, Burgdorfer and coworkers at the National Institutes of Health reported that a spirochete, isolated from *Ixodes dammini* collected at Shelter Island, New York, was the causative agent of ECM, and that the spirochete also reacted positively with immunoglobulins of

patients with Lyme disease.¹⁰ In 1983, in separate studies, Steere *et al* and Benach *et al* isolated spirochetes indistinguishable from the *I. dammini* spirochete from lesions of patients with ECM and from the blood of patients with Lyme disease.^{11,12} Finally, identical spirochetes were isolated from *I. ricinus*, the European species associated with the first recognized case of ECM in 1909.¹³

Clinical features of Lyme disease

The appearance of the ECM lesion marks the beginning of the first stage of Lyme disease. It usually appears within three to 32 days of the tick bite and is the most important sign in the early stages of the illness. ECM classically begins as a red macule or papule at the site of the tick bite and then extends as an annular erythema. As the lesion expands, sometimes to an area with a 12-inch diameter, the center may clear, leaving a reddish elevated ring whose periphery can appear irregular but clearly distinct from the surrounding tissue. There can be many variations of this classical lesion. In addition, about half of patients will develop multiple annular secondary lesions within several days of the appearance of ECM.

Accompanying ECM may be some or all of the following non-specific signs and symptoms: malaise, fatigue, headache, fever, chills, arthralgias, myalgias and

regional lymphadenopathy. Stiff neck, photophobia and dysesthesias, as well as other signs and symptoms, also can occur. ECM and the secondary lesions usually fade within three to four weeks, although this may occur sooner, or, on occasion, it may take several months.^{6,14,15}

The second stage of Lyme disease begins weeks to months after the onset of ECM. Neurologic manifestations are seen in approximately 15%

to 30% of patients. The range of possible abnormalities is broad and can include unilateral or bilateral Bell's palsy, cranial neuropathies, unilateral or bilateral radicu-

lopathic syndromes, aseptic meningitis, acute or chronic encephalitic syndromes (sometimes with dementia and/or seizures) and encephalomyelitis or transverse myelitis.^{14,16,17} Cardiac manifestations are seen in about 5% to 8% of cases. The most common clinical sign is fluctuating degrees of atrioventricular block. Other possible abnormalities include acute myopericarditis, left ventricular dysfunction and cardiomegaly.^{14,18}

Arthritis is the most dominant manifestation of the third stage of the disease, occurring in approximately 60% of patients weeks to years after the ECM stage. The arthritis tends to be recurrent. It primarily affects the large joints (most commonly the knees), although arthritis involving both large and small joints also occurs. About 10% of patients develop chronic arthritis.^{15,19} In addition to the arthritis, certain neurologic

conditions may appear months to years after initial infection and thus fall into the third stage of the disease. These conditions include multiple sclerosis-like demyelinating illnesses, various psychiatric disorders (primarily reported in children infected before the age of 10) and conditions characterized by episodic, often incapacitating fatigue lasting days to weeks.¹⁵

Any of these clinical manifesta-

recommended that women who acquire Lyme disease be treated promptly with penicillin.²²

Diagnosis is based on clinical signs and symptoms and the results of serologic testing. Several commercial laboratories and the Indiana State Board of Health laboratory perform this testing. A significant proportion of Lyme disease patients, perhaps two-thirds, will not recall having a tick bite, which is not surprising given

the small size of *I. dammini* and it may not stay attached for long periods of time.²³

Currently, antimicrobial therapy with oral tetracycline is recommended for patients with early manifesta-

tions of Lyme disease; children and pregnant women should be treated with penicillin.^{23,24,25}

According to one report, complications associated with the second and third stages of the illness did not occur in patients treated with tetracycline but were observed occasionally in patients who received penicillin or erythromycin.²⁶ Some patients treated early in their illnesses reportedly have become reinfected.²⁰

Because the results of serologic tests for Lyme disease are often negative during the first few weeks of infection, the diagnosis should be made on the basis of clinical criteria, and treatment should be started immediately. If the infection is recognized, early antibiotic therapy may prevent subsequent, potentially serious, clinical manifestations of the illness.²⁶

Manifestations of the later

The most common clinical sign is fluctuating degrees of atrioventricular block. Other possible abnormalities include acute myopericarditis, left ventricular dysfunction and cardiomegaly.

tions can occur in isolation. They also can be recurrent. In addition, subclinical infections may be a common occurrence.²⁰ Untreated asymptomatic individuals appear to be at risk for late complications of the disease.¹⁵

Acquiring Lyme disease during pregnancy continues to be cause for concern. Transplacental transmission of *B. burgdorferi* can occur, and fetal deaths and malformations occurring after the mother became infected with the spirochete have been reported. A recent report documents transmission of *B. burgdorferi* from mother to fetus during the first trimester of pregnancy with resulting overwhelming spirochetosis in the fetus and intrauterine death near term.²¹ The need for rapid diagnosis and treatment of maternal infection may be critical for the prevention of fetal damage due to intrauterine infection. It has been

stages of Lyme disease may respond to therapy with antibiotics and other drugs, although some late complications can be refractory to treatment.¹⁵ Treatment recommendations for all of the stages of Lyme disease are discussed in a recent article.²⁵

Lyme disease in America

Reporting of Lyme disease cases by stage began in 1980 when 226 cases were reported from 14 states and the District of Columbia.²⁷ By 1982, it became apparent that reports were coming from three geographical areas: The east – Connecticut, Delaware, Georgia, Maryland, Massachusetts, New Jersey, New York, Pennsylvania and Rhode Island; the Midwest – Minnesota and Wisconsin; and the West – California, Nevada and Oregon.

By 1984, Lyme disease had become the most commonly reported tick-borne illness in the United States; 1,498 cases were reported from 21 states.²⁸ Through 1986, a total of 5,731 cases had been reported to the Centers for Disease Control (CDC), of which approximately 4,500 had occurred since the beginning of 1984, and Lyme disease had been reported from 32 states.²

A provisional total of 2,410 cases has been reported to the CDC for 1987, and Lyme disease has now been reported from 43 states (Ted Tsai, Division of Vector-borne Diseases, CDC, personal communication).

Lyme disease has become an international health concern. Cases have been reported from most European countries, Australia²⁹ and more recently from Japan³⁰ and possibly Africa.³¹

Since the discovery of the first ECM lesion in Wisconsin, growing

concern exists about the extent to which Lyme disease might eventually spread in the north central United States. Dryer and his colleagues at the University of Iowa were the first to express this concern when they reported three cases of Lyme disease in patients from Wisconsin.³²

Currently, the Midwestern focus of Lyme disease has epicenters in Wisconsin and Minnesota, which have reported 623 cases and 328 cases respectively for 1980 through 1986. However, scattered cases have been reported from Michigan, Illinois, Ohio, Missouri and Iowa.²

By 1984, Lyme disease had become the most commonly reported tick-borne illness in the United States.

This distribution of the disease is closely correlated with the distribution of its principal tick vectors, *I. dammini* in New England and the Midwest, and *Ixodes pacificus* in the West.^{7,16} However, evidence exists that the lone star tick, *Amblyomma americanum*, may be involved in disease transmission in some areas.³⁴

Isolations of *B. burgdorferi* also have been made from the American dog tick, *Dermacentor variabilis*, the rabbit tick, *Haemaphysalis leporispalustris*, and the cat flea, *Ctenocephalides felis*.^{35,36} However, the importance of these arthropods as vectors of Lyme disease awaits investigation.

Until 1986, the distribution of *I. dammini* in the Midwest appar-

ently was confined to east central Minnesota and northwestern Wisconsin.^{37,38} Only occasional exceptions occurred when vacationers to these areas discovered ticks on themselves or their dogs after returning home to neighboring states.

However, since 1986, independent investigators have been finding *I. dammini* ticks in increasing numbers in nearby states and also reporting occasional cases of Lyme disease.

In 1986, nine *I. dammini* adults were collected on the Upper Peninsula of Michigan, where five Lyme disease cases were reported (Neil Pennington, Michigan Department of Health, personal communication). In 1986 and 1987, *I. dammini* ticks were collected from dogs and deer in northern and eastern Iowa (Nixon Wilson, University of Northern Iowa, personal communication). In 1987, two adult specimens were collected from deer in Illinois (John Bouseman, Illinois Natural History Survey, personal communication).

In 1988, *I. dammini* ticks were found on numerous deer in Ogle and Rock Island counties in Illinois, suggesting the probable establishment of populations in that state (Uriel Kitron, University of Illinois, personal communication).

In 1987, four specimens were collected from deer in northern and western Indiana, but no specimens were found in 1988. No *I. dammini* have been reported from Ohio, but numerous specimens have been collected in Erie County, Pennsylvania, which borders on northeastern Ohio (Richard Berry, Ohio Department of Health).

Lyme disease in Indiana

Since 1983, 10 confirmed and

probable cases of Lyme disease have been reported in Indiana residents (Table). It is reasonable to believe additional cases have not been recognized. The reported cases have occurred in people living in various parts of the state.

Although some of these individuals may have acquired their infections during visits to other areas of the country, evidence exists that endemic transmission is occurring in Indiana. Ages of the patients ranged from 2 to 72. Four patients were younger than 15 years of age. Six of the cases were males, and four were females. Seven of the 10 cases (63%) were reported during 1987 and 1988. This could represent an actual increase in the incidence of the infection, an increased recognition of the disease by physicians, or a combination of these two factors.

Significance to public health

The extent to which Lyme disease will become a significant public health problem in Indiana depends on several factors. The most important of these factors is the degree to which *I. dammini* is able to become established in the state.

Studies in New England have shown the establishment of herds of white-tailed deer (*Odocoileus virginianus*) have preceded *I. dammini* tick populations^{39,40,41,42} and a positive correlation between the abundance of *I. dammini* larvae and the density of deer pellets has been reported.⁴¹ More recently, a reduction in *I. dammini* populations was recorded following the elimination of deer.⁴³ Deer populations in Indiana have been steadily growing since 1950.⁴⁴ The number of hunter-harvested

Table			
Confirmed and probable cases of Lyme disease in Indiana residents by year of report, county of residence and location of possible out-of-state tick exposure from 1983 to 1988.			
Year of report	Confirmed or possible case*	County of residence	Possible out-of-state location of tick exposure
1983	Probable	Marion**	
1983	Confirmed	Marion	Kentucky
1985	Probable	Jasper	
1987	Probable	Vanderburgh	
1987	Probable	Wayne	
1987	Probable	Franklin	Wisconsin
1987	Confirmed	Allen	Wisconsin
1987	Probable	Henry	
1988	Probable	Vermillion	
1988	Confirmed	Marion	New Jersey
*Confirmed case: ECM plus a positive serological test indicating infection with <i>B. burgdorferi</i> .			
Probable case: Positive serological test indicating infection with <i>B. burgdorferi</i> plus the presence of one or more of the recognized clinical manifestations of Lyme disease, for example, arthritis, heart block or Bell's palsy, that cannot be explained on the basis of some other disease process.			
**This patient was lost to follow-up before a travel history could be obtained.			

deer has doubled since 1982 and is now at an all-time high (Craig Albright, deer biologist, Indiana Department of Natural Resources).

A second factor in the establishment of Lyme disease in Indiana is the abundance of white-footed mice, *Peromyscus leucopus*, which serve as a host for the larval stage of *I. dammini* and as a reservoir for *B. burgdorferi*.^{45,46} Unfortunately, white-footed mice are abundant throughout Indiana.

The importance of other wildlife in the maintenance of the disease in nature is unknown.

In summary, there is little reason to think that Lyme disease will not become established in Indiana. However, even in the unlikely case that Lyme disease transmission remains a rare event in Indiana, physicians must be aware of the possibility that patients may have Lyme disease after traveling to regions where Lyme disease is indigenous.

Advice to physicians

Lyme disease is occurring in Indiana residents. As is evident from the discussion above, it has the potential to cause significant morbidity in some patients. However, early diagnosis and initiation of antibiotic therapy may prevent the occurrence of serious illness. Physicians in the state need to be aware of this disease and its multiple clinical presentations so it can be recognized promptly and the patient started on appropriate treatment. Physicians and their office staffs can perform a valuable service by educating their patients on measures to prevent tick bites and by promptly reporting suspected and confirmed cases to public health officials as required by Indiana law. □

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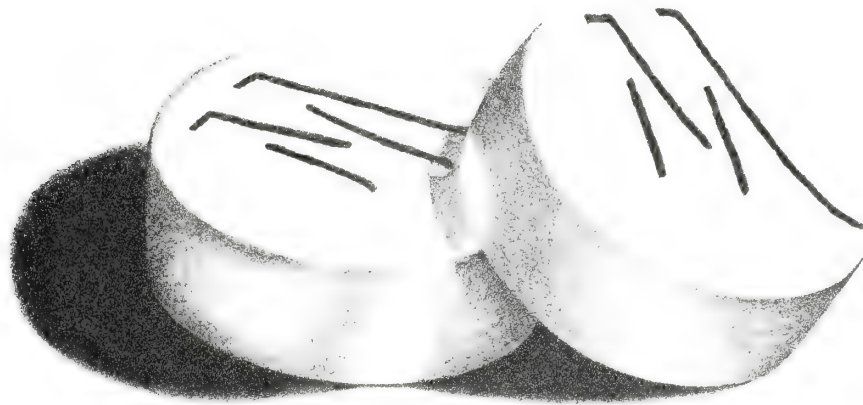
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The use of analgesics for cancer pain

Wayne O. Evans, Ph.D.
Indianapolis

Editor's note: This is the third in a monthly series of six articles about cancer pain.

The goal for the management of cancer pain is to produce as much pain relief as is desired by the patient with a schedule of administration that prevents the occurrence of pain and provides the fewest side effects.

Basic principles

- Always individualize the treatment regimen. Patients vary greatly in their response to analgesic medications, their tolerance of pain and discomfort, the state of their disease and their benefit from nonpharmacological methods of pain relief.
- Always combine therapies whose mechanisms of action are based on different principles. A synergy will occur. This will allow the side effects from any one of the approaches to be minimized. It is entirely proper for a physician to prescribe physical methods, such as an exercise program or ice massage, while a patient practices self-hypnosis and, simultaneously, uses analgesic drugs. The use of adjuvant medications should be the rule rather than the exception.
- Start with weaker drugs, such as nonsteroidal anti-inflammatory

drugs (NSAID), and advance to stronger ones as required. This procedure is intended to reduce the adverse impact of side effects associated with more potent drugs.

- In using narcotic drugs, titrate the dose upward until relief is obtained. Patients vary widely in the amount of narcotic required to give them pain relief. It is not unusual to see a 10-fold difference in required dose for different individuals. Using upward titration, a physician usually can advance to the point where the patient will have satisfactory pain relief.
- Determine the time-action of the drug for a particular individual. Much individual variation can be seen in the ability of patients to metabolize drugs. For example, though the average half-life of morphine is three hours, one standard deviation is 1.2 hours on either side of that time. This indicates that two or three patients out of every 100 will metabolize morphine with a half-life of less than one hour.

The easiest way to determine the time-action of the drug is to ask the patient, first, if he ever receives adequate relief and, second, if the pain returns before the time of the next drug administration. To develop an adequate maintenance schedule, first use short-acting narcotics, so a stable blood level can be reached rapidly. It takes between four and five doses of a drug administered

at its half-life for a stable blood level to be obtained. The use of long-acting substances unnecessarily prolongs the time to stable state. After the appropriate dose and schedule of administration have been decided by the use of pro re nata medications, then the preferable procedure is to place the patient on a fixed interval schedule of administration. This procedure is done so the pain never recurs. When this type of schedule is followed, the patient's anxiety and anger are reduced because he no longer fears the return of his pain.

- The patient should have adequate "rescue" measures. The patient's pain will vary as a function of his activities of daily living and other causes. Therefore, it is wise to have short-acting narcotics available to the patient for use as "rescue" medications.
- Whenever possible, use oral rather than parenteral administration. Oral administration is suggested because it is much easier on the patient.

Information on the use of pain medications may be obtained in *Handbook on the Rational Use of Medications for Pain* by G.M. Aronoff and W.O. Evans (Della Corte Publications Inc., 1987¹). This book is free and may be obtained from your local representative of Winthrop Pharmaceuticals or by contacting Medical Information of Winthrop-Breon Laboratories. Other major sources of informa-

tion are *The Pharmacological Basis of Therapeutics*, (A.G. Gillman, L.S. Goodman, T.W. Rowell, F. Murad, editors; MacMillan; 1985²) and *Cancer Pain, the Medical Clinics of North America*, (R. Payne, K.M. Foley, editors; W.B. Saunders Co; March 1987³).

These books include descriptions of drugs, relative potencies, oral to parenteral ratios and average half-lives.

The use of nonsteroid anti-inflammatory drugs

This group of medications is the first line in the management of cancer pain. Aspirin is the best-known drug of this series. Aspirin predominantly has its effect by the blocking synthesis of prostaglandins. Prostaglandins have been implicated as a major part of a pain process in bone tumors.⁴

The use of animal models has shown that aspirin inhibits bone tumor growth. Aspirin and the other NSAID are limited in their effectiveness due to a ceiling effect. For aspirin, the ceiling is approximately 1,000 mg for analgesia. Up to four grams a day may be taken for inflammatory disorders. The utility of aspirin and the other NSAID may be limited by their effect on blood coagulation in patients with thrombocytopenia or bleeding disorders.

The response to various NSAID may be different for different patients. Therefore, for the patient having mild to moderate pain, the physician should switch the patient from one drug to another as soon as an adequate trial for each drug has been attempted. In patients with terminal disease, phenylbutazone may be of particular value. For patients in a terminal phase, the possible blood dyscrasias are less important.

Acetaminophen is equianalgesic and antipyretic to aspirin and the other NSAID. However, it is a very weak inhibitor of prostaglandin synthesis. For this reason, it does not cause changes in blood coagulability, but its utility may not be as great. When the blockage of prostaglandin is the target of the pain control as in multiple bone metastases, NSAID are more effective.

Aspirin predominantly has its effect by the blocking synthesis of prostaglandins.

If aspirin or acetaminophen cannot control the pain, the next step is to combine it with a weak opioid agonist, such as codeine oxycodone. Propoxyphene has been used, but it does not seem to increase significantly the analgesic potency beyond the aspirin or acetaminophen with which it is combined.⁵

The use of fixed ratio compounds (Percocet, Percodan, etc.) may cause problems. As tolerance develops, the physician may wish to increase the dose of the opioid. However, in fixed ratio drugs, increasing the dose also will increase the dose of the NSAID, possibly above its ceiling effect. This may increase the toxicity of the NSAID without further analgesia. For this reason, it usually is best to administer the compounds separately, allowing better individualization of doses for different patients.

The use of narcotics

At equianalgesic doses, the side effects of the opioid agonists are

essentially the same.¹ They will produce the same degree of nausea, sedation, constipation, urinary retention and myoclonus. Therefore, other properties must be considered to make a decision as to which drug to use. These drugs do not have a ceiling effect to limit their analgesic properties. In practice, the appearance of the adverse side effects limits the dosage given to the patient.

The various opioid agonists do vary in their relative potencies. The increased potency of one drug over another does not provide any particular advantage, since raising the dose of the less potent drug achieves the same analgesic effects.

The opioid agonists also vary in terms of their average half-lives. There are very long-acting compounds, such as methadone or levorphanol, and relatively short-acting compounds, such as hydromorphone or alphaprodine. There is a great individual variability in half-life. The time-action for each drug must be determined for an individual patient. Time-action tends to be longer with oral administration.

Some problems are associated with drugs with long half-lives. Methadone has a complex metabolism. Although its average half-life is 30 hours, it must be given every six to eight hours for adequate analgesia. This can lead to an excessively sedated patient who is not receiving adequate analgesia. This situation is likely to occur with the elderly, where half-life tends to be prolonged. Meperidine is another drug that probably is unsuitable for long-term use because of its metabolism. Its toxic metabolite normeperidine may accumulate and cause convulsions.

The opioid agonists also differ

in their average oral bioavailability. There is great individual variability in oral bioavailability. A study of oral morphine found different individuals vary from 15% to 49% absorption.⁶ These individual differences make it necessary to tailor the drug dose for each patient.

Tolerance develops with continued use for all opioid agonists. Luckily, there are parallel curves for the development of tolerance to the analgesia and to respiratory depression. Regardless of the development of tolerance, satisfactory analgesia without fear of respiratory depression may be obtained by upward titration. Should respiratory depression occur, it is handled easily by the administration of naloxone. What may seem to be the development of tolerance to opioids also can be an increase in pain due to advancement of the disease.

One method of managing tolerance to opioids is based on the fact that the opioids are only partially cross tolerant. Thus, if one switches from one opioid agonist to another, generally a 50% reduction in the amount of dose needed would be used. These calculations are made in morphine equivalents that can be obtained from the references mentioned.

The physician should be prepared to manage the side effects of initiating therapy with opioid agonists. Nausea, sedation, constipation, urinary retention and myoclonus should be assessed on a continuing basis and an appropriate treatment program developed to mitigate their effects.

The antagonist-agonist group of narcotics has little use in the management of cancer pain since their analgesic effects have a relatively low ceiling and psychotomimetic

effects are quite common.

Under some circumstances, the use of narcotics will require the prevention of a withdrawal syndrome. For example, should a patient on a reasonably high dose of narcotics benefit from an anesthesiological or neurolytic procedure, withdrawal of opioids would be necessary. Withdrawal generally can be managed without difficulty by reducing the dose of the narcotic approximately 15% to 25% every three days. If trouble occurs, the dose may be raised and tapered more slowly.

Routes of administration

When pain will be treated for a long period of time, as in most cancer pain, the oral route of administration is preferred because of the ease with which a patient can take the medication. Previously, morphine, usually at a starting dose of 10 mg every four hours, was the drug of choice.

With the advent of slow-release forms of morphine, administration two or three times daily has been found to provide adequate maintenance analgesia.⁷ The initial dose should be determined by titration of an immediate release form. The slow-release forms of morphine obviate the need to use drugs with more complex metabolisms such as methadone and levorphanol.

If a patient has nausea or dysphagia that interferes with the use of an oral medication, rectal medications are available for many of the compounds. Pharmacists can prepare admixtures with appropriate dosage. Buccal administration of morphine has been shown to be effective.⁸ At present, no specific forms of morphine have been developed for this route of administration.

The partial agonist buprenorphine can be absorbed from the sublingual route.¹ This is not presently available in the United States. Clinical trials are now underway. As a partial agonist, buprenorphine can precipitate withdrawal reaction in a patient who is taking opioid agonists. This reaction may limit its utility. It does have some advantages in minimizing constipation. As an analgesic, it has no particular advantage over the opioid agonists.

Subcutaneous administration of a drug can be useful. This can be done through an implanted needle by bolus injections or by continuous infusion either by a pump⁹ or Travenol infusor,¹⁰ developed recently. The continuous subcutaneous infusion of an opioid has been demonstrated to be effective in the long-term care of outpatients. Stable blood levels may be maintained for a considerable period of time. This method, of course, would be most useful in patients for whom the oral route is unsatisfactory.

Within the hospital, the IV infusion of the opioid is the usual method of administration.¹¹ It has the advantage of immediate action. It can be delivered either by continuous infusion or the use of patient controlled analgesia.^{11,12,13} Both methods have been shown to be effective.

In long-term utilization of narcotics, intramuscular administration is not acceptable since the multiple needle insertions are painful and not accomplished easily in a wasted patient.

Intraspinal administration of narcotics is a recent method based on the finding of receptors that are sensitive to opioids within the spinal cord. Both epidural delivery and intrathecal delivery of

opioids have been used.^{14,15,16,17}

Both methods can produce an excellent analgesia using relatively small doses of opioids with little sedation. Over time, tolerance develops to both intrathecal and epidural opioids. There is probable limited use for this method except in patients for whom systemic narcotics are no longer effective.

Recently, opioids have been delivered directly to the lateral cerebral ventricle by an implanted cannula.¹⁸ This method has been used in the cancers of the head and neck when systemic narcotics were no longer able to provide adequate analgesia.

It has been reported that complete analgesia was obtained without noticeable neurological changes or side effects severe enough to require discontinuation of therapy. Tolerance seemed to be less marked than with parenteral opioids. Initial doses vary between 0.1 mg to 4 mg. The method has been extended by using refillable continuous infusion devices attached to the intraventricular cannula. □

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is linked to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon[®] is indicated as a sympatholytic and mydriatic. It may have activity as an aphrodisiac

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.^{1,2} Also dizziness, headache, skin flushing reported when used orally.^{1,3}

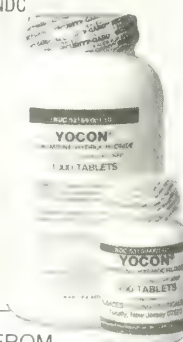
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.^{1,3,4} 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.³

How Supplied: Oral tablets of Yocon[®] 1/12 gr. 5.4 mg in bottles of 100's NDC 53159-001-01 and 1000's NDC 53159-001-10

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BRIEF SUMMARY

CONTRAINDICATIONS

There are no known contraindications to the use of sucralfate

PRECAUTIONS

Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post-healing frequency or severity of duodenal ulceration

Drug Interactions: Animal studies have shown that simultaneous administration of CARAFATE (sucralfate) with tetracycline, phenytoin, digoxin, or cimetidine will result in a statistically significant reduction in the bioavailability of these agents. The bioavailability of these agents may be restored simply by separating the administration of these agents from that of CARAFATE by two hours. This interaction appears to be nonsystemic in origin, presumably resulting from these agents being bound by CARAFATE in the gastrointestinal tract. The clinical significance of these animal studies is yet to be defined. However, because of the potential of CARAFATE to alter the absorption of some drugs from the gastrointestinal tract, the separate administration of CARAFATE from that of other agents should be considered when alterations in bioavailability are felt to be critical for concomitantly administered drugs

Carcinogenesis, Mutagenesis, Impairment of Fertility: Chronic oral toxicity studies of 24 months' duration were conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). There was no evidence of drug-related tumorigenicity. A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies were not conducted

Pregnancy: Teratogenic effects. Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established

ADVERSE REACTIONS

Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients treated with sucralfate, adverse effects were reported in 121 (4.7%).

Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo

OVERDOSAGE

There is no experience in humans with overdosage. Acute oral toxicity studies in animals, however, using doses up to 12 gm/kg body weight, could not find a lethal dose. Risks associated with overdosage should, therefore, be minimal

DOSAGE AND ADMINISTRATION

The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate

While healing with sucralfate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination

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Reference:

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Ultrasound guided drainage of pleural fluid

Judi Ng
Gonzalo T. Chua, M.D.
Anastacio Ng, M.D.
Indianapolis

Abstract

Ultrasound guided drainage has been reported as a highly successful drainage procedure.^{1,4,10}

Computed tomography (CT) and fluoroscopy also have been cited as favorable imaging modalities for the treatment of pleural effusion.^{7,8} With its extreme sensitivity to fluid collections and rapid and accurate localization of fluid, real-time ultrasound has become the primary imaging modality for the interventional drainage of pleural fluid.

This is a retrospective study of patients with radiographically suspected pleural effusion, using ultrasonic scanning for possible drainage. A special bedside drainage technique in critically ill patients also is described.

During a 2-year period between June 1985 and May 1987, 84 patients were referred for ultrasound guided drainage after chest radiographs showed pleural opacities consistent with the presence of pleural effusion. In 61 patients, the presence of fluid was verified by ultrasound, while the remaining 23 had a negative ex-

amination for fluid.

In the 61 patients with fluid, 83 procedures were performed; 26 of these were done in the intensive care unit (ICU) using a portable sonography unit. The age range of the patients who had the procedure was 6 to 90 years. Of the 84 patients referred for drainage, 37 (44%) were referred from the ICU. Of these 37 ICU patients, 11 were shown to have no pleural fluid, and the remaining 26 patients who did show fluid were drained bedside in the supine position using our bedside technique.

All ultrasound examinations were performed with a commercially available real-time scanner. Before the patient was scanned, his previous radiographs were reviewed. The effusion was classified as small or large, and free or loculated by the presence of visible layering of fluid on decubitus films.

When clinically possible, the patient was examined in a sitting position to better localize gravity dependent fluid. All patients scanned in the ICU were either in a supine or minimal oblique position. The sonograms were done to determine if pleural opacities seen on chest radiographs represented pleural fluid and, if so, to determine the angle, depth and best site for catheter or needle insertion. If fluid was not seen on real-time, a note was made in the patient's chart and drainage was not performed.

Patients with a positive scan for fluid were prepared and draped in a sterile fashion. A local anesthetic, usually 1% Xylocaine, was injected at the determined point of entry and a 5 French or 8.2 French Elecath catheter was used.

In the case of a catheter, after anesthetic was administered, a small stab wound was made at the point of entry with a #11 scalpel blade. This site was widened with small hemostat forceps, to prevent the catheter from bending or buckling during insertion. The catheter was introduced to the pleural space by the trocar technique. In bedside procedures, the catheter was inserted horizontally, parallel to the bed and usually with a lateral approach about 3 centimeters above the posterior axillary line.

If the initial insertion failed to produce fluid, a second attempt was made under direct guidance of the ultrasound probe wrapped in sterile plastic wrap (*Figure 1A and 1B*). A postdrainage ultrasound was performed in order to determine whether the effusion was completely drained or whether any remaining fluid required further manipulation.

In most cases, the catheter was withdrawn immediately after the procedure was completed. In a few cases, however, the catheter was sutured in place for sclerotherapy or further drainage after a maximum amount of 1,200 cc's was removed.

Results

In this series, 61 of the 84 patients referred for ultrasound guided drainage were positive for pleural effusion and had the procedure at least once; 40 were drained once unilaterally; 10 had the procedure once bilaterally, 10 twice unilaterally, and one patient three times unilaterally.

In all 10 patients with bilateral effusions, both pleural spaces were drained at the same time. The amount of fluid obtained ranged from 2 to 1,200 ml. In all cases, fluid samples were sent to the laboratory for cytology and culture and sensitivity. The ma-

jority of the fluid samples taken were serous, sanguinous or both. Four samples were purulent, and one was blood due to hematoma.

Among the 61 patients in whom sonographically guided drainage was performed, the most common primary diagnosis was pneumonia, followed by metastasis and congestive heart failure. A large number of patients had multi-system disease. Pleural drainage was performed as a diagnostic and therapeutic procedure.

Eighty-three procedures were performed on 61 patients. Twenty-six procedures were done bedside in the ICU. In nine cases

where patients had extremely large effusions, the catheter was connected by extension tubing to positive pressure drainage. In 14 cases, the catheter was sutured in place for sclerotherapy. Fifty-100 mL of either tetracycline, at a dosage of 50-75 mg/mL, or Bleomycin, at a dosage of 60-180 mg in saline, was injected into the pleural space via the catheter. This procedure was done to prevent any further effusion, by instigating the growth of fibrous tissue. In six cases, (7.2%), ultrasound guided drainage was successful after a surgically placed chest tube failed to drain the pleural space.

No fluid was removed in one case, although chest radiographs and ultrasound suggested the presence of pleural fluid. In five cases (6%), more than one attempt was made, and in four cases, fluid was eventually aspirated. The number of attempts did not exceed three.

In the remaining 78 procedures (94%), fluid was obtained after just one insertion of the catheter. The only complication that occurred as a result of drainage was minimal pneumothorax. In six cases (7.2%), pneumothorax was discovered after successful aspiration by postchest radiograph. In all six cases, the pneumothorax was apical and less than 20%, requiring no further treatment.

Discussion

Because of its portability, sensitivity in identifying fluid and ability to localize fluid collections rapidly, real-time ultrasound has become our imaging modality for the detection and treatment of pleural effusions.

The primary advantage of ultrasound guided drainage is the convenience of real-time and portability. It is extremely sensitive in

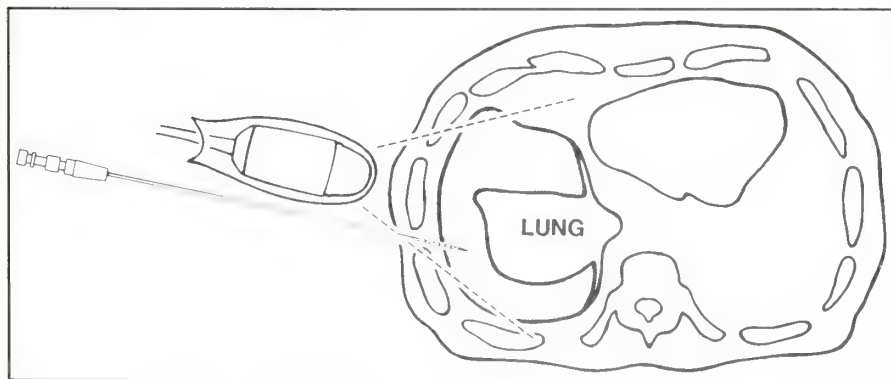


Figure 1: A. Real-time ultrasound at bedside visualizing the pleural space with catheter needle along the horizontal plane.

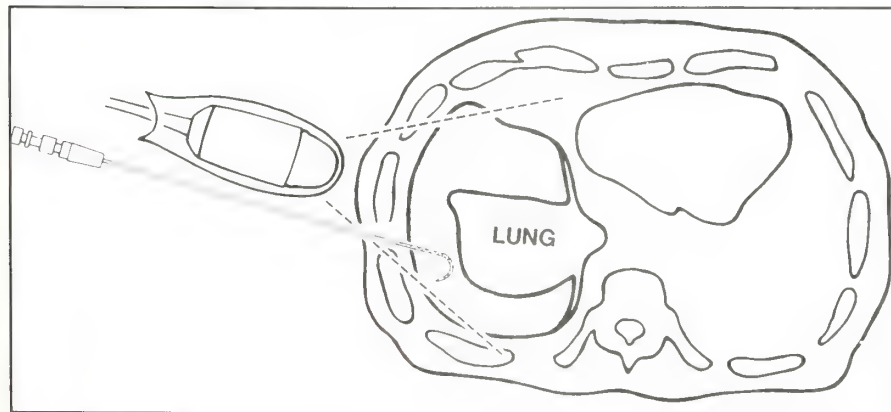


Figure 1: B. Real-time ultrasound at bedside visualizing the threading of the catheter into the pleural space.

identifying fluid collections. In this series of 84 patients, 23 (27.4%) were saved from an unnecessary procedure when ultrasound detected no pleural fluid. Ultrasound can distinguish the cause of inconclusive pleural opacities seen in radiographs, such as effusion vs. atelectasis.

Other pertinent information can be obtained quickly on real-time ultrasound. Vital structures and anatomic landmarks can be identified quickly and, therefore, can be avoided when entering the pleural space. Blind or unguided puncture can result in injury of the liver or spleen. Diaphragmatic movement also can be observed on real-time.¹

All this information can be obtained with just one examination. Others have reported the short examination time of real-time sonography when compared to static compound scanning.⁴

Pleural fluid drainage may be preferred on critically ill patients, who are unable to be transported from their rooms, with the use of a portable sonography unit. Twenty-six of the total 83 patients (31.3%) were done bedside in the ICU. Thirty-seven of the total 84 patients (44%) referred for diagnosis and drainage were scanned in their rooms with a portable unit. Hirsh *et al*⁴ reports that 12 of the 50 (24%) patients referred for ultrasonic evaluation of abnormal chest radiographs were examined bedside.

Sixty-one patients underwent a total of 83 drainages; only one procedure failed to yield fluid, with a success rate of 98.8%. Moore *et al*¹⁰ reports a 97% success rate in the diagnostic ultrasound guided drainage of 114 patients

and a 100% success rate at the therapeutic ultrasound guided aspiration of 41 patients.

Of the 83 procedures performed in this series, six (7.2%) resulted in a postdrainage pneumothorax. Hirsh *et al*⁴ reported a 7% incidence of pneumothorax. Harnsberger *et al*¹ suggests that the pneumothoraces may be caused by air leaks occurring during the connection and disconnection of stopcocks and tubing, after the pleural space had been entered by the catheter or needle. In all six cases, the pneumothoraces were minimal, less than 20%, and apical, not requiring any treatment.

Ultrasound guided drainage is a valuable alternative to surgical drainage for patients at a high risk for general anesthetic.⁹ In this procedure, a local anesthetic is sufficient, so the patient experiences only minimal discomfort. There is no recovery time; after the procedure is finished the point of entry only needs to be covered with an adhesive bandage. The procedure time is also significantly shorter in an ultrasound guided drainage than in a surgical drainage.

Because of its many advantages, real-time ultrasound guided drainage should be the primary procedure for the treatment of pleural effusion. Portable sonography units make this procedure available to ICU patients in whom drainage of pleural fluid is most crucial. ▴

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Early experience with the Palmaz stent in human iliac angioplasty

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Although percutaneous transluminal angioplasty (PTA) is an established effective treatment for arterial stenoses,¹⁻¹¹ it is limited by postangioplasty restenosis (PARS).^{2,6,8-10,12-14} PARS comprises a number of pathologic and functional entities that result in restenosis in the acute (periprocedural) period, in early follow-up (less than one year and generally less than six months) and in late follow-up (greater than one year) (Table). Although plaque fracture with or without localized intimal-medial dissection is one of the pathologic hallmarks of successful angioplasty,¹⁵ there are negative aspects of this controlled vessel injury. Acute reclosure due to PTA-induced dissection occurs in 3% to 5% of percutaneous transluminal coronary angioplasties (PTCAs). Early PARS (generally before six months) occurs in about one-third of angioplasties of medium and small arteries. It is probably most often due to fibro-

cellular proliferation of medial myocytes and/or multipotential cells, possibly stimulated by platelet-derived growth factor (PDGF).

This conclusion is derived from an ever-increasing body of evidence. In the past decade, experience with post-carotid-endarterectomy restenosis has taught us that early recurrences are due to this peculiar process and the late ones, occurring after one year postoperatively, are due to recurrent atheroma or progression of athero-

matous disease.¹⁶⁻¹⁸ In the past six years, fibrocellular proliferation has been proven responsible for post-PTCA early restenoses.¹⁹⁻²¹ More recently, the same process has been discovered in percutaneous atherectomy specimens taken from sites of early PARS in the superficial femoral arteries.²²

Pharmacologic regimens, stents and thermal welding of the intimal-medial dehiscences of PTA are among the interventions being developed to deal with acute,

Table

Pathologic and functional entities comprising post-angioplasty restenosis (PARS)

<u>Acute PARS</u>	thrombosis spasm spasm + thrombosis dissection dissection + thrombosis elastic recoil
<u>Early PARS</u>	fibrocellular proliferation elastic recoil recovery of myocyte function atheroma
<u>Late PARS</u>	atheroma

early and late PARS.²³⁻²⁵ Vascular intraluminal stenting was first used experimentally by Dotter in 1969.²⁶ The stainless steel coil he used was mounted coaxially over a guidewire, positioned with a pusher catheter, then deposited into the femoral arteries of dogs. Since then, various other coil stents²⁷⁻²⁹ and a spring-loaded zigzag stent³⁰ have been described.

The Palmaz Balloon Expandable Intraluminal Stent, tested extensively in animals,³¹⁻³⁶ has been in human trials in Europe for approximately two years and in the United States for nearly as long. We are participating in an international multicenter trial of the Palmaz Stent in human iliac angioplasty.³⁷ Herein, we report our experience in our early cases.

Patients and Methods

Patients were selected from our population of patients with iliac atheromatous disease according to inclusion and exclusion criteria of the FDA-supervised clinical protocol. Basically, the inclusion criteria in phase I were the same as those for iliac angioplasty without stenting. Exclusions are extremely long iliac artery stenoses and aneurysms, as well as bleeding diatheses and other usual exclusion criteria for angioplasty. All procedures were done with informed consent and with approval of the institutional review board.

The Palmaz Stent is fashioned by electrical discharge machining from a single tubular piece of thin-walled stainless steel. The length is 30 mm, nominal outer diameter is 3.4 mm and the recommended expansion diameter is 8 to 12 mm.

Figure 1 shows a stent in collapsed and expanded states.

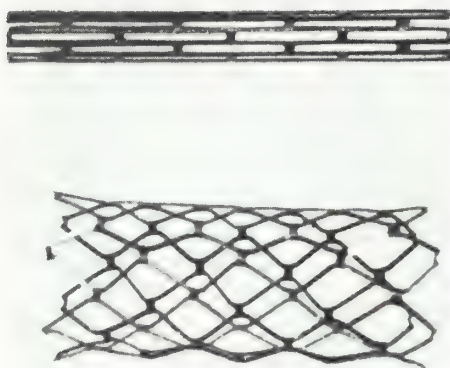


Figure 1: A. Side view of the Palmaz Stent in collapsed and expanded states shows how rectangular slots become diamond-shaped openings that provide an enlarged stent resistant to radial collapse.

Rows of regularly staggered rectangular slots are machined into the steel tube. The stent is mounted securely onto an angioplasty balloon measuring 8 mm x 3 cm with the use of a custom-designed crimping tool.

In each procedure (Figure 2), the initial step is partial balloon angioplasty with a balloon that is properly sized for the particular vessel. With a guidewire still across the angioplasty site, the balloon-mounted stent is positioned at the site within a delivery sheath. The sheath is withdrawn, the balloon is inflated, then deflated for deployment of the stent.

Prestenting and poststenting intraluminal pressures are used to verify successful stenting. The protocol also calls for noninvasive studies, including preprocedure and postprocedure ankle/arm indices, calf/arm indices and upper and lower thigh/arm indices. Patients are followed carefully in the postprocedure period indefinitely according to protocol.

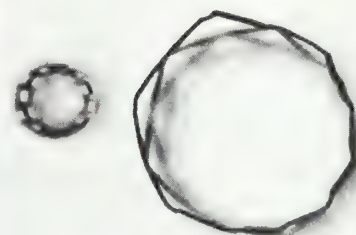


Figure 1: B. Axial view of collapsed and expanded stents highlight the excellent ratio. This means a large expanded diameter can be reached via a small introduction system.

Case 1

A 53-year-old man with a 10-year history of impotence and a previous five-vessel coronary artery bypass operation had bilateral lower extremity claudication at one-half block level walking. The claudication was markedly worse on the right than on the left and involved the buttocks, thighs and calves. The right ankle/arm index was 0.70. An angiogram performed one month before admission disclosed a severe focal right iliac stenosis (Figure 3A) and a left superficial femoral artery occlusion with popliteal reconstitution via enlarged profunda femoral artery collaterals.

Under local anesthesia and par-entheral analgesia in the angiography suite, the right femoral artery was punctured percutaneously. Intraluminal pressure measurements and arterial waveforms were obtained pre-tolazoline and post-tolazoline (25 mg intra-arterial (I.A.)). After the stenosis was safely crossed with a guidewire, a

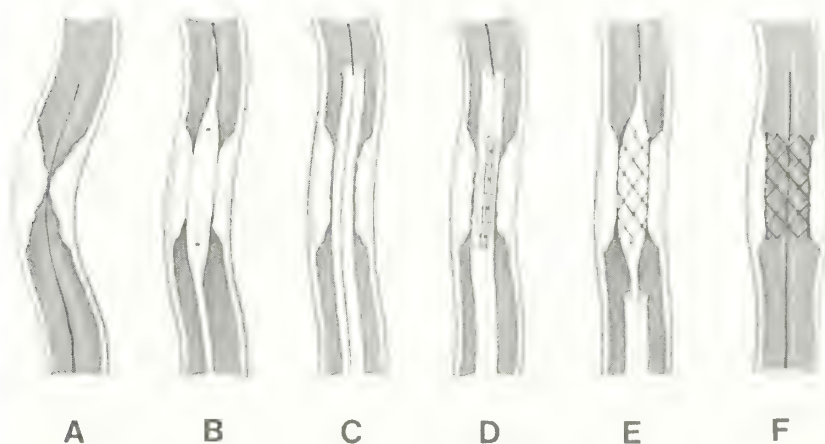


Figure 2: Procedure for percutaneous transluminal deployment of the Palmaz Stent in human iliac angioplasty. A. A guidewire is placed across the offending stenosis. B. A balloon angioplasty catheter is positioned within the stenosis, then inflated in order to partially dilate the lesion. C. With the guidewire still across the lesion, the angioplasty catheter is removed and replaced with a sheath. D. The stent, already mounted and crimped onto a balloon catheter, is introduced to the level of the lesion, but within the sheath. E. The sheath is withdrawn and the angioplasty balloon is inflated. F. The balloon is deflated and withdrawn.

5Fr catheter was placed in the distal aorta and another pressure measurement was made. The mean pressure gradient before angioplasty and stenting was 39 mm Hg. After predilation with a 6 mm x 2 cm balloon angioplasty catheter, the stent procedure was performed as outlined above. Intraprocedural (Figure 3B) and postprocedural (Figures 3C & D) films documented both the stent expansion and the improvement in luminal diameter. The residual mean pressure gradient was 0 mm Hg. There were no complications.

At 13 months' followup since the stent procedure, the thigh/arm, calf/arm and ankle/arm indices have been 1.0 and the

patient's symptoms of right lower extremity claudication have resolved. His impotence has improved. He has residual left lower extremity (mild) claudication, presumably due to his left superficial femoral artery occlusion. A follow-up plain film of the pelvis has shown no evidence of stent migration.

Case 2

A 66-year-old man with a heavy smoking history and chronic obstructive pulmonary disease had right lower extremity claudication at one-half block of level walking. He had failed to respond to parenteral infusion of ciprostone, an investigational prostacyclin ana-

logue used for lower extremity ischemia, approximately three months earlier. The right ankle/arm index was 0.78 at rest. An arteriogram disclosed bilateral iliac atheromatous disease, most severe on the right, with both a long segment of disease and a severe point of maximum stenosis (>90%) (Figure 4A).

Using the same basic procedure as in Case 1, the pre-stent mean pressure gradient across the right iliac stenoses was found to be 42 mm Hg. A preliminary angioplasty was performed, resulting in an extensive amount of plaque fracture and intimal-medial dehiscence easily demonstrated angiographically (Figure 4B).

Because the right internal iliac artery origin had been determined to be occluded on the preliminary arteriogram, stent positioning was focused upon the intimal-medial dehiscence and not upon the origin of the internal iliac. With the guidewire still in position across the treated area, a stent was placed in the common iliac artery. This resulted in an improvement in luminal diameter, as well as a partial closure of the intimal-medial dehiscence (Figure 4C).

A second stent then was placed below the first one in tandem and with a 4.5 mm gap between the two. The final arteriogram sequence disclosed both a marked improvement in the luminal diameter of the right iliac and a complete closure of the intimal-medial dehiscence (Figure 4D). The residual mean pressure gradient was 1 mm Hg. There were no complications.

At nine months' followup post-procedure, the patient had no right lower extremity claudication and his ankle/arm index was >1.0

at rest.

At press time, we have placed 25 iliac stents in 11 extremities in 10 patients. One patient had Fontaine II A ischemia, five had II B, three had III and one had IV. All extremities in all patients have responded well and there have been no stent-related complications.

Four patients needed outflow procedures such as femoropopliteal grafting or infrainguinal angioplasty. Three of these procedures have been completed. The mean followup is 4.4 months and the average ankle/arm index is 0.96. If the patient still in need of an outflow procedure is excluded, the average ankle/arm index is 1.03.

Discussion

Since the pathophysiologic varieties and causes of PARS are many, it is reasonable to expect the solutions to be numerous. Intraluminal stenting provides the potential for accomplishing all of the following: 1) a reduction in PTA-related acute reclosure due to dissection. Interestingly and importantly, Case 2 represents the first time a Palmaz Stent has been used to tack down an extensive PTA-related dissection; 2) a reduction in restenosis due to elastic recoil; and 3) a reduction in PDGF-stimulated fibrocellular proliferative restenosis. The latter would hinge on the mechanically simple notion that closure of the plaque fractures and intimal-me-

dial dehiscences of PTA may protect the media from exposure to PDGF and perhaps other circulating mitogens. Laser thermal welding and RF-current thermal welding may be additional means of providing the same end result without introduction of a foreign body. In addition, laser-generated thermal energy has already been studied in normal arteries for its ability to reduce elastic recoil.³⁸

Although the potential risks of intraluminal stenting include infection, thrombosis, embolization, perforation, aneurysm formation and pseudoaneurysm formation, 113 patients have been treated with Palmaz Expandable Iliac Stents worldwide to date, and only one thrombosis with the



Figure 3: Case 1. A. Preliminary angiogram in the right posterior oblique (RPO) projection shows a severe stenosis of the right common iliac artery.



Figure 3: Case 1. B. Intraprocedural film shows stent immediately after expansion and balloon deflation.



Figure 3: Case 1. C. Completion angiogram at the end of the procedure.



Figure 3: Case 1. D. Stent in position on RPO pelvic film after procedure.

stent in the artery proximal to the stent has occurred. This vessel was reopened with fibrinolytic therapy, and a PTA of the remaining stenotic segment below the stent prevented recurrence. None of the stents has migrated, and very few other stent-related complications have occurred.

In addition to intraluminal stenting with iliac angioplasty, the Palmaz Stents have now been approved for investigational use in a coronary trial in the United States. Thus far, 52 patients have had coronary Palmaz Stents placed. In addition, three patients who failed renal angioplasty have undergone successful stenting and have been normotensive for as long as one year. The renal protocol soon will begin in the United States, and Indiana University will

be participating.

In experimental animals, the stent has been shown to endothelialize completely and rapidly. Functioning endothelium has been documented by factor VIII-related antigen staining. This degree of endothelialization contrasts sharply with the lack of endothelialization in human surgical grafts. It has been attributed to the large proportion of vessel area underlying the stent (approximately 80% in the fully expanded state) that is covered by endothelium rather than the steel of the prosthesis. According to scanning electron microscopic examination of animal specimens, vessel orifices that have been bridged by the stent have remained patent.

Although more time and additional studies will be needed to

understand the efficacy and appropriate indications for the Palmaz Expandable Intraluminal Stent in PTA, the initial results are promising. Additional applications, such as treatment of aortic dissection and percutaneous portocaval shunting are already being planned. □

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Figure 4: Case 2. A. Preliminary angiogram discloses bilateral iliac atheromatous disease, more severe on the right than on the left. The markedly irregular right iliac artery has a severe point of maximum stenosis (>90%) (arrows).

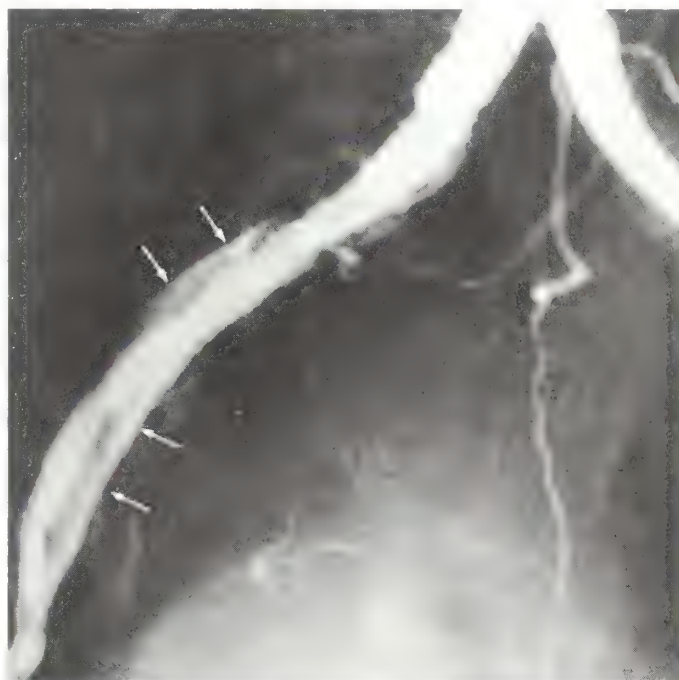


Figure 4: Case 2. B. Angiogram following preliminary iliac angioplasty shows extensive plaque fracture and intimal-medial dehiscence (arrows).

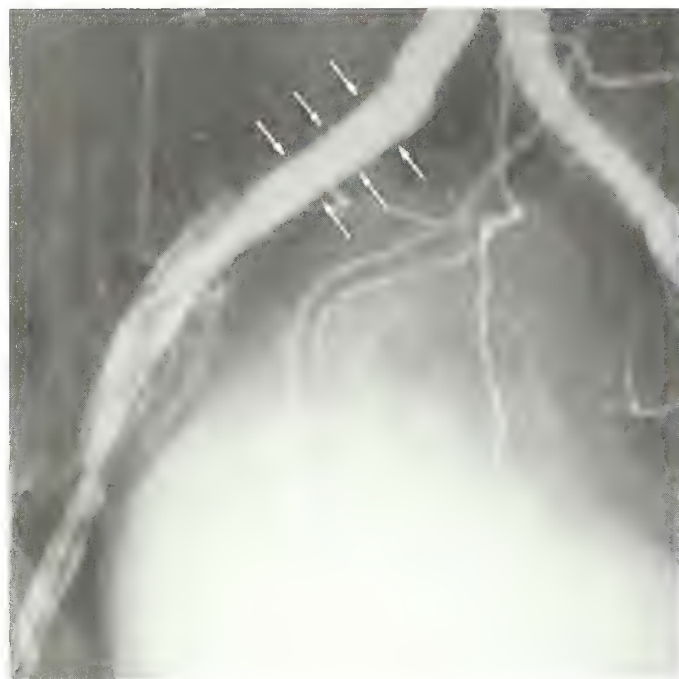


Figure 4: Case 2. C. After placement of the first (proximalmost) stent, the most cephalad portion of the angioplasty-induced dissection is closed (arrows).

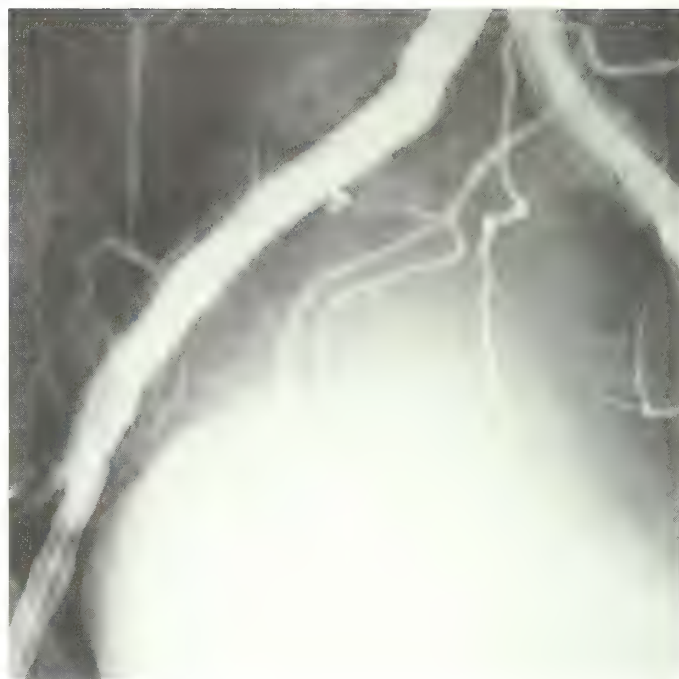


Figure 4: Case 2. D. After deployment of the second stent in tandem and distal to the first, completion angiogram reveals a nearly normal lumen of the right iliac artery.

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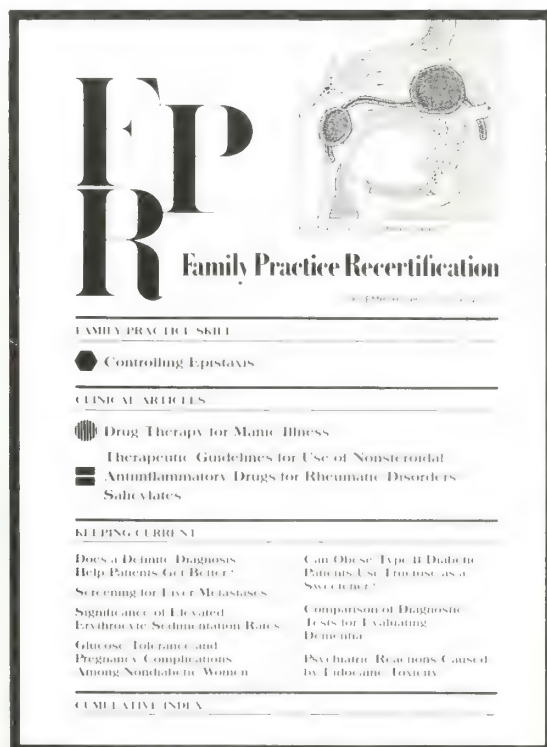
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Advantages of split-funded medical insurance

Gregory Wright, CFP
Indianapolis

In an effort to control rapidly rising health insurance costs, many employers are turning to forms of self-funding. Split-funding, a recent approach, offers help for smaller groups. For some, the savings can be one-fourth or more over the cost of some traditional plans.

For most employer groups, a traditional or pooled insurance plan has resulted in cost increases that reflect the claims experience of the whole pool. The problem is, inevitably, a small percentage of the groups in the pool generate the largest percentage of the pool's total claims.

The result is those employers with favorable claims experience pay for the poor experience and abuses of other groups. You may realize very little or no benefit for having favorable claims experience.

It's a variation of the old 80/20 rule. Generally, 20% of your customers generate 80% of your profits. Generally, 20% of your employees generate 80% of your personnel problems. Similarly, generally 20% of employer groups generate 80% of an insurance pool's health claims.

It doesn't take a genius to discover the profitability of a medical insurance pool has an impact on the rates an individual employer pays.

If the medical claims experience of your group is low, your medical insurance premiums are used in part to reduce the insurance premiums of others. If your employees pay part of the premiums, they in turn are reducing the cost paid by employees of other companies.

What is low claims experience? If your gross health insurance premiums exceed your claims by more than 20%, you are probably paying too much.

Ask your insurance agent what your "loss ratio" has been. Experienced and knowledgeable agents usually have this information or can obtain it for you. However, if it is low, be prepared for some

and pay claims. This works well for many employers with 100 or more employees. It works for some employers in certain circumstances with 50 to 99 employees.

However, a compromise between the custom self-funded and traditional fully insured plan is the so-called split-funded approach. It offers the premium savings potential of the partial self-insured plan, without the cost of custom design and hassle.

This approach has many benefits to the organization with about 15 or more employees and low claims experience. These benefits include reduced expense, improved cash flow, traditional plan appearance and features, elimina-

tion of unnecessary reserves and elimination of the problem associated with incurred but not reported claims. It also allows you the option to revert to a traditional plan

***For most employer groups,
a traditional or pooled insurance plan has
resulted in cost increases that reflect the claims
experience of the whole pool.***

foot dragging. They may not want you to know. It might require them to answer some hard questions, and they run the risk of losing your business.

A full self-funded plan is only appropriate for a very large employer because a few catastrophic claims could damage the financial strength of the company.

There are, however, ways to partially self-insure medical insurance risk. One way is to purchase insurance to protect against catastrophic loss and use an independent company to custom design and administer your plan

in the future.

With the split-funded plan, the employer assumes a specifically defined and limited portion of the risk normally borne by an insurance company.

The employee pays the individual deductible and part of a specified maximum copayment, just as in a traditional plan. The employer pays the other part of the copayment. The insurance company pays the remaining cost.

If the plan provides for a \$200 deductible and 20% copayment maximum of \$2,500, an employee could pay a maximum of \$700

(\$200 deductible, plus \$500 copayment). With a split-funded plan, the employer would pay the balance of the coinsurance up to the maximum level. In this example, the employer maximum amount could be \$2,000. Also, most plans provide an aggregate stop loss protection that limits the employer's self-insured liability to an overall maximum amount.

If this sounds like so much insurance agent lingo to you, let me give you a real life example.

A manufacturing company with 31 employees and an annual health insurance cost of \$60,000 had experienced claims of \$45,000 during the past year. This left the insurance company a reasonable \$15,000 to pay for processing claims, taxes, marketing expenses and profits. However, because the insurance company experienced an overall loss ratio of 110% and was losing money, the insurer raised everyone's premiums by 42%. My client's new rate would be \$85,200 per year. This situ-

ation may sound familiar.

If the manufacturing company's claims cost remained the same, the higher new rate would indicate a loss ratio of 53%. Since health insurance companies need about 20% to 25% of medical insurance premiums to meet their cost and profit objectives, the manufacturer would be paying about \$30,000 too much.

A solution was sought by obtaining competitive quotes with the same specifications as the old plan and a split-funded quote. The competitive traditional plan quote narrowed the increase to an annual premium of \$69,000.

However, the split-funded quote offered an interesting alternative. The minimum funding required would be \$32,000 and the total maximum exposure was \$74,000. Based on historic claims experience and inflation, we estimated the cost would be \$60,000. Also, since the employees would be informed the employer was paying part of the cost of each claim,

it was believed this would help curb some abuse of health insurance.

The maximum risk was to pay \$5,000 more than a traditional plan. The potential reward was to save \$9,000 or more above that same traditional plan. Management also realized it could help influence employee medical expenses. The decision was split-funding.

A split-funded medical insurance plan isn't for every organization or employer. However, if claims experience has been good and management is willing to assume a specific, maximum risk, then such a plan might be the best strategy for reducing health care costs for both the employer and its employees. □

Gregory Wright, CFP, is vice-president of the executive and employee benefits divisions of the Conner Insurance Agency, Inc. Offices are located in Indianapolis, Kokomo, Bloomington and Fort Wayne, Ind.

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Computer systems for patient accounting

Jack Valancy
Cleveland Heights, Ohio

Patient accounting is a principal application of computer systems in medical practices. Various computer systems offer many features and capabilities in a broad range of prices. Analyzing your practice's patient accounting functions will help you determine your practice's specific requirements for computer software, hardware and vendor support.

Software

Software is the programmed instructions that direct a computer system to perform specific tasks. The nature of your practice will determine the patient accounting software features you will need. The following software features and capabilities are organized by basic patient accounting functions.

Store patient information

All patient accounting software stores each patient's name, address, telephone number, birthdate, sex and health insurance information.

- If some of your patients aren't responsible for paying their bills, the software should also store the guarantor's name, address and telephone number.

- If you care for families, consider software that can handle family accounts: transactions are grouped by guarantor and appear on a combined bill.

- If many of your patients are covered by more than one health insurance policy, such as Medicare and a supplementary insurance policy, you will want to

make sure the software can accommodate it.

- The ideal and most complex software stores information about an unlimited number of insurance companies for each patient, allowing a specific policy to be designated for each procedure.

Post transactions

The patient accounting software should store details about procedures, diagnoses, insurance companies and other standard information. When the operator enters a code, the appropriate information is retrieved.

- If your fees vary depending on the patient's insurance coverage, you might want software that can store several fees for each procedure and automatically select the correct one.

- If your specialty requires you to supplement procedure codes with modifiers or other information, be sure the software can handle this procedure.

- If you treat many hospitalized patients, software that posts an identical charge for each consecutive day of care, when "from" and "to" dates are entered, can be a time saver.

- If you perform services that consist of several individual procedures, software allowing the operator to enter a single code to retrieve this information also can save time.

- If transactions are posted in batches, look for software designed for rapid data entry.

Patient accounting software uses three methods of posting payments and adjustments: balance forward, open item and open claim.

- In balance forward processing, payments and adjustments are posted against the patient's undifferentiated balance due. If you do not participate in any insurance plans, and your patients are responsible for the full amount of your fees, regardless of the amount reimbursed by insurance, this might be all you need.

- In open item processing, payments and adjustments are posted against specific unpaid charges. This method makes it easy to identify partially paid charges and bills or adjust the unpaid portion.

- Open claim processing groups charges that have been submitted on the same insurance claim. Payments and adjustments are posted against the claim's unpaid balance.

Control system operations

- Most patient accounting software requires a password to be entered before operations can be performed.

- In simple systems, the operator can perform all functions.

- In sophisticated systems, passwords can be designed to grant access to some functions and restrict access to others.

All patient accounting software packages produce a detailed listing of all transactions posted since the last reconciliation was performed. Once the transactions are reviewed and if necessary, corrected, they are reconciled.

- The software should not allow reconciled transactions to be altered. Corrections should be made by entering another transaction to reverse the error.

- If several people use the system, it is more convenient if the

software enables all of them to reconcile their own transactions.

- For ultimate accountability, some systems identify operator's transactions with their initials.

Produce bills

Bills should be detailed and easy to understand.

- If you accept assignment of insurance benefits, bills should note the charges for which claims are pending and clearly show the amount due now from the patient.

Bills can be produced in several formats:

- Self-mailer forms combine an outgoing envelope, bill and return envelope in a single piece.

- Fold and stuff bills, as the name suggests, require more preparation for mailing but look better.

- The system should be able to presort the bills by zip code, so you can take advantage of lower postage rates.

- To streamline the process, you might want the system to prepare the bills in weekly cycles, such as a quarter of the bills in each of four weeks.

Process insurance

- Simple patient accounting systems produce just one type of insurance form: the HCFA 1500 universal claim.

- More sophisticated systems are capable of producing many different claim forms. Be sure the system you select can produce insurance claims in the formats you will need.

- With electronic claims submission, claims are transmitted to the insurance carrier's computer without printing them on paper. This procedure reduces rejections and speeds payment.

- If a significant number of

patients are covered by several insurance policies, be sure individual charges can be submitted or resubmitted for reimbursement under any policy without difficulty.

Pursue delinquent accounts

- Most patient accounting software produces an aged trial balance, a report that breaks down the amount due from each patient by the length of time each charge has remained unpaid.

- More sophisticated systems enable you to view only the accounts that meet certain conditions in formats convenient for performing collection tasks.

- Some systems store notes in each account to document collection activity.

- Most systems print dunning or past due notices on patient bills with delinquent balances.

- Some also print personalized collection letters.

- You should be able to suppress these notices and letters for certain patients, as necessary.

Produce reports

Most patient accounting software packages produce reports that summarize charges, payments and adjustments posted during the previous month.

- Many can organize this information in a number of ways, such as by physician and location.

- Some perform sophisticated analyses, such as determining the profitability of treating patients enrolled in an HMO.

- Many allow users to custom-design reports of information stored in the computer.

Hardware

Hardware is the physical computer equipment, which is noth-

ing more than a vehicle for running the software. While it must have the capability and speed to operate the software, the fastest, most powerful model is not always necessary.

A typical configuration includes:

1) the system unit, containing a processor, which performs logical and arithmetic functions, and memory, which temporarily stores programmed instructions, data and the results of processing; 2) devices such as the disk and tape drives for more permanent storage of information; 3) one or more terminals, consisting of a monitor and keyboard that enable people to communicate with the computer system; 4) one or more printers; and 5) a modem, which links the computer to other computers.

Vendor support

Vendor support can help you get the most from your investment. Services include: site preparation; training; installation of hardware and software; assistance in converting records; and postimplementation support.

Vendor support can make the difference between a barely functioning computer system and one that exceeds expectations. Training is important for all applications. For patient accounting, help with converting records to the new system is crucial because errors arising from a bungled conversion can result in hostile patients, lost revenue and angry physicians. □

Jack Valancy heads a health care management consulting firm in Cleveland Heights, Ohio. Copyright 1989 by Jack Valancy Consulting. Reprinted with permission.

Fraud and abuse in health care joint ventures

John H. Fisher, II
Indianapolis

Physicians are frequently presented with opportunities to enter into business joint ventures with hospitals, other physicians and other health care providers. These arrangements can be good business ventures for physicians, especially when they are a natural outgrowth of the physician's practice. However, these joint ventures must be carefully structured to avoid a violation of the Medicare and Medicaid fraud and abuse rules.

This article will discuss the Medicare and Medicaid fraud and abuse rules including the new Proposed Safe Harbor Regulations and the impact of these rules on some common business arrangements entered by physicians.

The Anti-Kickback Statute and new proposed regulations

Section 1128B of the Social Security Act¹ (Anti-Kickback Statute) makes it a federal felony for any individual or entity to knowingly and willfully offer, pay, solicit or receive remuneration, in cash or in kind, directly or indirectly, overtly or covertly, in exchange for a referral or in order to induce referrals for health care services or the purchasing, leasing, ordering or arranging for any good, service, facility or item paid for under Medicare, Medicaid or other programs receiving federal funding.

The language and court interpretation of the Anti-Kickback Statute is extremely broad and could have an impact on many business arrangements commonly

entered into by health care providers. The broadest interpretation of the Anti-Kickback Statute to date was delineated in *United States v. Greber*² where the U.S. Court of Appeals for the Third Circuit held that the Anti-Kickback Statute prohibited not only direct kickbacks, but any payment where the intent is to induce referrals, even when another purpose for the payment is to compensate the recipient for bona fide services rendered. Under this interpretation, any payment methodology that encourages overutilization of health care services that are paid for by Medicare or Medicaid will be subject to fraud and abuse scrutiny even where no overutilization actually occurs.

Many physicians have made or are considering investments in entities that operate medical equipment or facilities to which the physician intends to refer patients. For example, neurologists and radiologists often invest in magnetic resonance imagers; urologists often invest in lithotriptors; family practitioners often invest in home health agencies, breast screening clinics or pharmacies. Physicians receive payment from these entities in a number of different forms.

The broad interpretation of the Anti-Kickback Statute has called into question many of these seemingly innocuous business arrangements and payment methodologies.

The Office of Inspector General (OIG), pursuant to congressional direction,³ has developed "safe harbor" regulations (Proposed Safe Harbor Regulations) that will provide for activities that can be

engaged in by health care providers without violating the Anti-Kickback Statute. The Proposed Safe Harbor Regulations were published in the *Federal Register* on Jan. 23, 1989, and were effective after the March 24 deadline for making public comments.

The Proposed Safe Harbor Regulations will provide guidance for providers in structuring health care joint ventures. The current drafts of the Proposed Safe Harbor Regulations are not law. However, these drafts do provide some guidance as to what practices individuals who are responsible for enforcement feel will not violate the Anti-Kickback Statute.

Even though failure to comply with the Proposed Safe Harbor Regulations will not lead to an automatic violation of the Anti-Kickback Statute, the new regulations will provide prosecutors with additional guidance as to what constitutes a violation of the Anti-Kickback Statute. This is likely to lead to increased enforcement activity. Thus, physicians should re-evaluate their current and contemplated practices and business activities and attempt to comply with the safe harbor regulations.

The remainder of this article will discuss the fraud and abuse aspects of the various forms of payment that physicians receive from entities to which they refer patients and will suggest some forms of payment that will be permissible under the Proposed Safe Harbor Regulations.⁵

Receipt of investment interest from joint venture entity

Physicians who invest in entities

to which they are in a position to make referrals often receive remuneration from those entities as corporate dividends, partnership distribution or interest on debt obligations. When payments received from the entity vary with the number of referrals made by the individual physician or are tied to the patient revenues generated from patients referred by the physician, a violation of the Anti-Kickback Statute will be present. Payments that are otherwise in excess of a fair return on the physician's investment or are made from entities when the physician is not truly "at risk" also may violate the Anti-Kickback Statute.

The Proposed Safe Harbor Regulations will create one "safe harbor" that will insulate the physician from fraud and abuse exposure for returns that the physician receives from an entity to which the physician refers patients.⁶

Under the Proposed Safe Harbor Regulations, investments in publicly held corporations with total assets in excess of \$5 million and a class of equity securities held of record by at least 500 people will not invoke fraud and abuse scrutiny. This safe harbor will not apply to most investments made by physicians to which referrals are made because these entities are normally held by small groups of investors. Additionally, most medical equipment ventures will have total assets under \$2 million or will lease the equipment from another entity. Thus, if the Proposed Safe Harbor Regulations are enacted in their present form, limited protection will exist for joint venture investments. The preamble to the Proposed Safe Harbor Regulations solicited public comments on other possible investment interest

safe harbors and suggested the inclusion of safe harbors for:

1. Investments in certain entities where: a) a bona fide opportunity to invest to people who are able to make or influence referrals are made on an equal basis; b) there are no requirements that the investor be in a position to make or influence referrals; and c) the amount of payment to the physi-

tured as service arrangements between providers. For example, hospitals often purchase medical equipment, urgent centers, cardiology centers and other similar health care businesses and contract with physicians for the management and the professional services at those entities. Payments to providers pursuant to these relationships can raise fraud

***Thus, physicians should re-evaluate
their current and contemplated practices and
business activities, and attempt to comply
with the safe harbor regulations.***

cian is in proportion to the physician's investment and the amount of the investment allowed to the physician is related to the number of referrals to the entity.

2. Investments in entities in which the physician has a significant management role.

Previous drafts of the Proposed Safe Harbor Regulations contained a requirement that all patients referred to the entity be given notice of the ownership interest and the patient's alternatives for treatment. This requirement was deleted from the most recent draft of the Proposed Safe Harbor Regulations. However, the preamble to the most recent draft of the regulation suggests that giving patient notices may be an additional way to reduce the risk of violating the Anti-Kickback Statute.

Payments received for services to other providers

Some joint ventures are struc-

and abuse concerns.

As with the payment of investment interest, payments for services in excess of fair value of those services or payments tied to referral volume or patient revenues generated from referrals will violate the Anti-Kickback Statute. A violation of the Anti-Kickback Statute also is likely to be present when a physician provides billing services to an entity only for patients whom the physician has referred to the entity. These arrangements are likely to be viewed as disguised referral fees.

The Proposed Safe Harbor Regulations will establish a safe harbor relevant to personal services and management contracts.⁷ In order to satisfy this safe harbor, a written agreement, signed by the parties, must specify the services to be provided. The agreement must be for a period not less than one year. If the services are not provided on a full-time basis, the agreement must specify the

exact schedule and charge for each interval.

As with the other safe harbors, compensation must be a fair market value without accounting for the volume or value of referrals. Patient notification requirements that were included in earlier drafts of the Proposed Safe Harbor Regulations have been deleted in the most recent draft.

Physicians should review their relationships with all other providers for whom they perform services. Written agreements that comply with the safe harbors should be entered between the physician and the entity for which the services are provided.

Although no longer a requirement of the safe harbor, physicians may wish to consider notifying patients of their relationship with the service entity and the other options that are available for the patient to receive these services as a way to further reduce the risk of violating the Anti-Kickback Statute.

Payments under leasing arrangements

A violation of the Anti-Kickback Statute also can occur when a joint venture leases office space or medical equipment from a physician who is a significant referral source. Rental payments that are above market value or that are calculated based upon the number of referrals, patient revenues or gross billings generated by the referring physician could violate the Anti-Kickback Statute. When rent is paid to an owner of medical equipment on a per procedure basis and volume discounts are given to the referring provider, a violation of the Anti-Kickback Statute also could be present. Under these circumstances, the

provider is given an incentive to overutilize the medical equipment in order to receive a higher profit margin on tests.

The Proposed Safe Harbor Regulations will establish a safe harbor relevant to personal services and management contracts.

The Proposed Safe Harbor Regulations create safe harbors for both equipment and space rentals when several conditions are met.⁸ First, there must be a written lease agreement for a term of not less than one year that clearly describes the premises or equipment that is being leased. When the space or equipment is not being rented on a full-time basis, the lease must clearly describe the periods of time that the space or equipment is being made available and the exact rent for each interval. The rent payable pursuant to the lease cannot be in excess of fair market value and cannot be calculated based upon the volume of referrals or the revenues generated therefrom. Lastly, the same disclosures that must be made pursuant to the other safe harbors also must be made to patients referred between the lessor and lessee.

Payments made to employees

The Anti-Kickback Statute and the Proposed Safe Harbor Regulations both provide that there is no violation of the Anti-Kickback

Statute for payments made to bona fide employees of an entity. In order to satisfy this exception, the physician must be an employee as defined in the Internal Revenue Code.⁹ Where the physician is made a bona fide employee of the joint venture entity, payments can be made to the physician based upon the volume of referrals, patient revenues or in other ways that give the physician an incentive to refer all patients to the entity. These employment relationships must be carefully structured to assure compliance with the Internal Revenue Code.

Other safe harbors

This article primarily discussed the safe harbors that frequently are at issue in health care joint ventures. However, joint ventures are not the only area where fraud and abuse frequently are confronted.

A violation of the Anti-Kickback Statute also can arise in other areas such as physician recruitment and incentive programs, sales of medical practices, payments to referral agencies and discounts and warranties from suppliers. The Proposed Safe Harbor Regulations also will create safe harbors in these areas.

The most recent draft of the Proposed Safe Harbor Regulations requested comments from health care providers on the issuance of advisory opinions under the Anti-Kickback Statute. It is not clear whether such a request will be included when the Proposed Safe Harbor Regulations are republished. The Department of Justice apparently objects to including such a provision because it feels that an advisory opinion system would hamper enforcement activities.

Conclusion

With the promulgation of the Proposed Safe Harbor Regulations, physicians should perform a fraud and abuse audit of their various business and financial relationships. Whenever possible, these activities should be structured to take advantage of the Proposed Safe Harbor Regulations. When compliance with the Proposed Safe Harbor Regulations is not possible, the payment mechanisms must be structured in a way that will minimize the physician's risk of violating the Anti-Kickback Statute. □

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Endnotes

1. The Anti-Kickback Statute was previously codified in 42 U.S.C. §1395nn and 42 U.S.C. §1396h. The Patient Program Protection Act consolidated these two provisions in §1128B, which has been codified as 42 U.S.C. §1320a-7b.

2. 760 F.2d 68 (3rd Cir. 1985), cert. denied 474 U.S. 988 (1985).

3. This congressional direction can be found in Section 14 of Pub. L. 100-93, which requires the OIG to promulgate rules "specifying payment practices that shall not be treated as a criminal offense under Section 1128B (b) of the Social Security Act and shall not serve as the basis for exclusion under Section 1128 (b)

(7) of such Act."

4. The Proposed Safe Harbor Regulations were published at 54 Fed. Reg. §3088 (1989) (to be codified in 42 C.F.R. §1001.952)

5. This article is based on the draft Proposed Safe Harbor Regulations, which were published in the Federal Register on Jan. 23, 1989. It is possible that there will be additional changes to the Proposed Safe Harbor Regulations when they are finalized.

6. The safe harbor regulations, once enacted, will be found in 42 C.F.R. §1001.952 et seq. The investment interest safe harbor will be found in 42 C.F.R. §1001.952 (a).

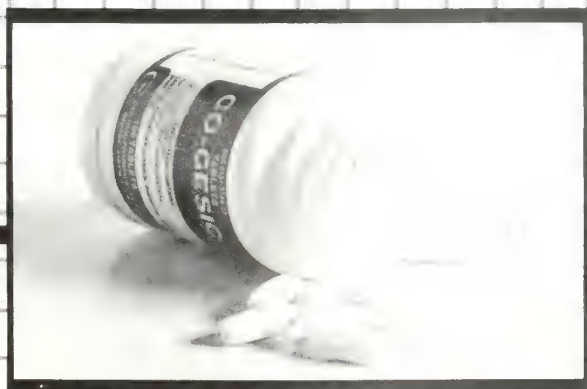
7. The personal service and management contract safe harbor will be found in 42 C.F.R. §1001.952 (d).

8. Two separate safe harbors will be created relating to lease arrangements. The equipment rental section will be located in 42 C.F.R. §1001.952 (c), and the office space lease safe harbor will be located in 42 C.F.R. §1001.952 (b).

9. 26 U.S.C. §3121 (d) (2).

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**Philip Ball, M.D.
Muncie**

I have decided I can't wait! I have decided that I'm not going to wait! I have decided I'm not going to sit around and wait for the Harvard resource-based relative value scale (RBRVS, HSIAO Report) to become medical law, so I, a general internist, can get just compensation for my work.

Medicare, Medicaid, Blue Shield and all the other medical insurance carriers, the PPO's, the HMO's the PDQ's, the LTD's and the BVD's all pay me a pittance for my one hour intensive history and physical exam performed in my office, including the use of my hired nurse, my hired secretary, my office overhead and my eyes, ears, hands, nose and brain. However, these same insurance third parties will pay grandiosely and extravagantly when any of my colleagues use a device, a wire, a hose, a light source, a catheter, a piece of machinery, an electronic device, a knife, a clamp, a saw, a nail file, etc.

Now, I have decided I am unable to wait for the RBRVS to become law, and after laborious research, I have developed a computerized robot that will perform the history and physical exam for me!

Several copies of the first robot prototype already have been produced in my laboratories. We call these H & P robots by the acronym H.E.E.P. The H.E.E.P. robot includes the usual video screen and a complex computer that can be activated by the human voice.

The robot is able to respond in a robotic voice so history can be taken from a patient by the voice technique with which patients are familiar. The robot completes the usual history sequence using the computer branching technique and then immediately spews out a typed copy of the history. The H.E.E.P. robot moves on to the

total physical exam, carefully inspecting the individual from retina to toenails and compares its findings against the range of normal in its memory storage.

Generally speaking, people seem to like the impersonal and nonjudgmental character of the H.E.E.P. robot. However, a few problems, gremlins or glitches

Table

HEIGHT EVALUATION	English	\$2
	Metric	\$2
AVOIRDUPOIS EVALUATION	English	\$2
	Metric	\$2
SPHYGMOMANOMETRY	RA sitting	\$2
	LA sitting	\$2
	RA standing	\$2
	LA standing	\$2
THERMAL EVALUATION	Fahrenheit	\$1
	Celsius	\$1
PULSE FREQUENCY DETERMINATION		\$2
IRIDO-DIAGNOSIS	With light	\$2
	With accommodation	\$2
RHINOSCOPY		\$2
RETINOSCOPY		\$2
E.O.M. EVALUATION		\$2
EXTERNAL AUDITORY CANAL SCOPING		\$2
TYMPANIC MEMBRANE INSPECTION		\$2
ORAL EVALUATION	Dental	\$2
	Gingival	\$2
	Glossal	\$2
	Buccal	\$2
	Pharyngeal	\$2
	Palatine	\$2

have occurred. Some people take offense at the abruptness of the H.E.E.P. system review questioning. For example, some people are offended when the robot voice switches from asking, "How are your bowel movements?" to asking "Tell me about your sex life." Some patients have complained about the robot's physical exam.

After completing the history and physical, the H.E.E.P. robot conducts a diagnostic search using a computerized diagnostic disc. After arriving at some tentative impressions, the robot verbalizes some instructions to the patient and spews out necessary printed prescriptions and instructions for the patient. The robot, if connected by a telephonic interface, also can make appointments for x-rays and lab tests and spew out printed appointment pages.

But most importantly, at the conclusion of its history and physical, the H.E.E.P. robot transmits by telephone the necessary

identifying numbers to gain compensation from the insurance carriers. The robot will change the present Mickey Mouse reimbursement of \$50 to \$75 into a generous \$633 reimbursement. The robot breaks a history and physical exam down into approximately 150 units for its computer and bills for each one of them. The *Table* is an example of a brief portion of the physical exam computerized billing.

The H.E.E.P. robot can reduce the time needed to complete the history to about 10 minutes. The patient is not allowed to carry out any palaver during the history taking, that is, no idle take about the weather, politics, fishing or golf, so no time is wasted.

The H.E.E.P. robot also can conduct an efficient and extensive physical examination in about five minutes. Therefore, the average general internist would be able to schedule four complete histories and physical exams for the

H.E.E.P. robot per hour. This scheduling would amount to four times \$633 of insurance compensation and would increase the general internist's income to compare favorably with those who perform colonoscopy, cataract surgery and pacemaker insertion.

Of course, any physician who buys a H.E.E.P. robot will have to amortize the cost, which is about \$6,000. But, as we begin mass production of the robots, the cost will decrease considerably. And of course, the cost of the robot is a deductible expense.

Orders are now being taken for H.E.E.P. robots and the price will be about \$6,000 F.O.B. Muncie, Ind. Delivery will be in the sequence of the orders received. Interested individuals should order promptly. May 1989 delivery dates are being scheduled. □

Correspondence: Philip Ball, M.D., 2600 W. Jackson, Muncie, IN 47303.

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317-577-1990.



■ cancer corner

William M. Dugan Jr., M.D.
Indianapolis

The American College of Surgeons announced that the next annual Cancer Management Course will be May 12 and 13 in Louisville, Ky. The course is comprised of 14 lectures, five skill stations and two patient management problems. A multidisciplinary approach to cancer patient care is emphasized. The course qualifies for 13 hours of CME credit in Category I as outlined by the American Medical Association for the Physician Recognition Award. The registration fee is \$275 for fellows of the college, participants in the candidate group and residents. The registration fee is \$350 for nonfellows. The fee includes a course syllabus and a manual. For additional information, call Clifola Coleman at (312) 664-4050, ext. 401.

Congratulations to Lloyd Everson, M.D., Indianapolis, on his appointment as the regional liaison for the American College of Surgeons in Indiana. Dr. Everson is the director of the Indiana Regional Cancer Center of Community Hospitals.

Congratulations to Wabash County Hospital, and to Robert La Salle, M.D., chairman of the Cancer Committee, for the initial three-year approval of their cancer program by the American College of Surgeons. This approval makes

Wabash County Hospital one of the smallest U.S. hospitals with cancer program approval.

The Marion County Cancer Society wants doctors to remind their patients about Camp Little Red Door held June 11 through 17. This camp offers cancer-stricken children and teenagers the opportunity to experience "normal" summer activities. One sibling per patient is invited to camp as space allows. A staff of experienced medical personnel offers 24-hour a day care. Patients on active treatment can receive their medications at the infirmary. All facilities are wheelchair accessible. For information, call (317) 925-5595.

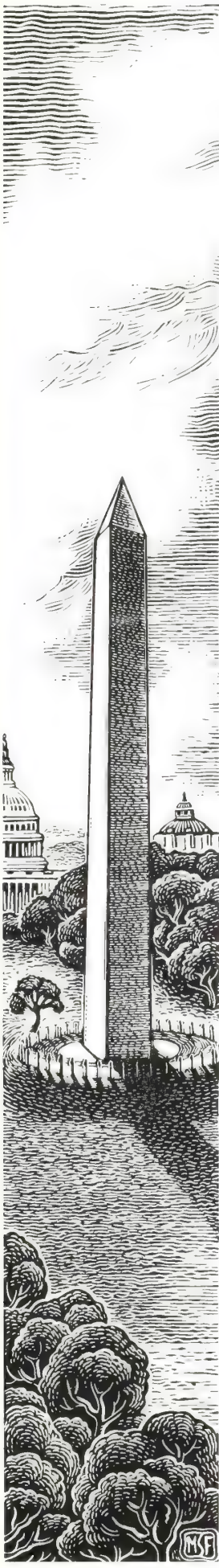
"Survivors Day" will be celebrated in Indiana Sunday, April 30. This event, sponsored by the American Cancer Society, will focus on the increasing numbers of people who survive bouts with cancer. A special celebration will be held in Indianapolis with Susan Bayh, the wife of Indiana Gov. Evan Bayh. The program will emphasize the need for earlier diagnosis of the disease. Many other community hospitals, including Decatur County Memorial Hospital in Greensburg and Jackson Schneck Hospital in Seymour, plan to recognize patients and their families who have survived cancer. For information, contact the local chapter of the American Cancer Society.

As reimbursement issues become more critical to all practicing physicians, the medical oncologists of Indiana have decided to become pro-active in dealing with third parties in Indiana. Robert T. Woodburn, M.D., of Merrillville, organized an ad hoc meeting of medical oncologists for the purpose of dealing with Medicare and the important and unique concerns of cancer medicine. An organizing committee including Lloyd Everson, M.D., William Dugan, M.D., Robert Hendershot, Steve Meyers, M.D., and Robert Woodburn, M.D., was selected. To receive additional information, contact any committee member.

Upcoming meetings: The Indiana Association of Osteopathic Physicians and Surgeons Annual Convention will be April 27 through 29 at the Westin Hotel in Indianapolis. The topic will be "Bridging the Age and Gender Gap - Diseases of Women and Children." Several programs on cancer will be presented. For additional information, call Steven Noone, D.O., at (317) 926-3009.

The Dayton Oncology Society and the Hipple Cancer Research Center will present "Tumor and Host Properties Involved in Blood Borne Metastasis of Specific Sites" Wednesday, May 3. The guest lecturer will be Garth L. Nicholson, Ph.D., from M.D. Anderson Hospital and Cancer Center.

For information, call (513) 293-8505. ▀



OVER A CENTURY AGO, a thousand visionary physicians across the nation bestowed a commemorative stone carving to the Washington Monument. This patriotic display symbolized their unrelenting devotion to a new republic founded on freedoms—including the freedom to practice medicine for the best possible health of all its people. *Today your help is needed to restore this symbol of our profession.*

Because the commemorative stone has suffered from severe erosion and defacement,

the American Medical Association is launching a campaign to raise money from physicians to restore this symbol of medicine for the National Park Service. Every contribution made to this effort will serve as a statement of each physician's personal affirmation and commitment to health and medicine in America.

Please take part in rededicating the commemorative stone as a shining example of the strength of medicine in a free and strong society. Contributors who donate \$100 or more will receive a memorial replica of the carving as a token of appreciation. Send your tax deductible contribution for this timeless symbol today. Thank you.



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■ editorial

Frank B. Ramsey, M.D.
INDIANA MEDICINE editor

A new type of organization has been formed in Indiana to discuss, investigate and adjudicate questions of pertinency and carrier fulfillment appearing in the filing and processing of some claims for reimbursement for services to dependents of Medicaid and Medicare.

The formation of the organization went through more changes than occur in the life of a butterfly. The process was slow and, at times, difficult because no similar organization had ever been formed in the United States.

Formed as a coalition of senior citizens groups, physicians and other patient advocates, the organization has begun a series of monthly meetings with the representatives of Medicare carriers.

Beginning in September 1988, the meetings have accomplished several goals. The ISMA furnishes the meeting site and clerical support. Even this early in the negotiating process, several changes in the claims mechanism have been accomplished. In addition, the Medicare carrier has doubled its staff for this type of claim settlement, has retrained personnel and is modifying its computer software.

The Grant County Medical Society has been the origin and the focus of the development process. Both the Patient Advocate Committee and the Insurer Performance Review Committee of Grant County have been studying the problem for several years. The two committees and all members of the society have systematically defined the problem and have worked diligently on the solution. The ISMA Board of Trustees was

consulted early on, and many of the ISMA agencies have contributed hard work and good advice. The early experiences of the new organization indicate that the problem is soluble.

Diplomatic efforts of all the people involved, both in the new organization and in the insurance carrier industry, show promise of the ability to smooth out the difficulties and provide a Medicare/Medicaid system that will support the best of medical care with satisfactory financial help.

Insurer Performance Review is a publication of the Grant County Medical Society that is dedicated to the problems and processes that have developed. Copies of the October 1988 edition, which summarizes the events, are available as long as the supply lasts by writing: R.J. Jackson, M.D., 1009 Professional Arts Building, 500 Wabash Ave., Marion, IN 46952. □

■ letter to the editor

Arthur J. Kuhn, M.D.
Munster

I am writing to discuss my disgust at reading in the October 1988 issue of *INDIANA MEDICINE* a lengthy article by a freelance writer, Betty White, titled *Depression, etc.*, on page 851 and follows. My disgust comes from the Indiana State Medical Association's journal repeating the error that most of the popular media are guilty of, which is medical articles written by lay people with

no information.

This article, which I read in some detail, is almost exclusively a "book report" of some reports from the National Institute of Mental Health. As a physician practicing in Indiana, I feel nothing but disgust reading a rehash of material from a government institution by a freelance writer who wrote it for profit in a supposed professional medical journal.

I would ask that *INDIANA MEDICINE* not publish such material, which is better suited for the tab-

loid press and the sensational journals at the checkout counter of most supermarkets.

This is another example of government publishing something, lay people taking it to the media and then indicating that physicians don't know what they're talking about. □

Editor's note: The article in question should not have been published. However, during the reorganization of the journal staff, it was inadvertently placed in the wrong category.

Ann Wrenn
ISMA Auxiliary President

"Commitment renewed . . . potential unlimited." This quotation, by Mary Strauss, AMA-Auxiliary president, reflects the atmosphere surrounding the ISMA Auxiliary. The renewed commitment of each county medical auxiliary, indeed each individual member, is making a difference in Indiana.

Besides volunteering hundreds of hours each week, the organization has provided support and emphasis to the following areas:

1) AMA-ERF – Support for this education and research foundation is still our largest philanthropic effort. The I. U. Medical School benefits annually from the auxiliary's efforts. The continuation of medical education is an absolute necessity. The programs that benefit from AMA-ERF contribute to the medical excellence

for which all Indiana physicians have worked so hard.

2) Health projects – The projects initiated in the counties have concentrated on adolescent health issues addressed in the *White Paper*, published by the AMA. Teenage pregnancy, anti-tobacco programs and suicide awareness are just three areas of concern.

The ISMA Auxiliary has been asked to assist the Indiana State Board of Health in the prenatal initiative of Dr. Woodrow Myers. The steering committee for this program is studying the program and will announce the auxiliary's supporting role soon.

3) Medical legislation – The legislature's decisions affect all Hoosiers. Our key contact system works. By using the ISMA Legislative Alerts we are able to keep up-to-date on possible medical legislation in Indiana. We, in turn, can communicate these issues to our physician spouses

who also can talk with their legislators. Decisions regarding the practice of medicine are increasingly made by legislative bodies. It is vitally important to maintain open and knowledgeable communication with our legislators.

4) Support for medical families – The stresses of medical practice affect our marriages and children. We in the ISMA Auxiliary feel strongly that medical families deserve legitimate support programs. Not only are we discussing programs that will assist with alcohol and drug problems, but we are including the stresses caused by medical litigation.

The ISMA Auxiliary has focused on these four programs this year. All four areas deserve further time and effort. Our renewed commitment to the auxiliary's efforts has just scratched the surface of our potential as we continue to support the Indiana State Medical Association. □

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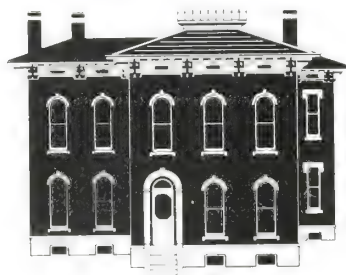
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Attention Indiana Physicians

The Physicians' Directory is the most ethical and professional method of announcing a specialty practice. It is also the most effective medium for listing office location, office hours and telephone number for the convenience of colleagues in referring patients.

The title of diplomate of a specialty examining board, a requirement for admission to the directory, offers its assurance of qualifications whether listed or not. In addition to providing benefits to physicians, the directory is a practical means of providing financial support for INDIANA MEDICINE.

All diplomates of the ISMA are invited to enter a professional card in the directory.

■ news briefs

CHAMPUS may cost-share

CHAMPUS-eligible people who also have medical care coverage through a health maintenance organization (HMO) may be able to have CHAMPUS cost-share some expenses under limited circumstances. Eligible people must receive care from HMO-affiliated hospitals or individual providers of care. The HMO's individual health care providers and institutions must meet CHAMPUS' certification standards in order for CHAMPUS to cost-share.

CHAMPUS claims from Indiana and 16 other states are no longer sent to Rhode Island. Send all claims to the Associated Group, P.O. Box 3056, Columbus, IN 47202.

Film catalog lists videos

The 1988-1989 catalog of entries for the Seventh Biennial John Muir Medical Film Festival is now available. The \$12 catalog lists 475 audio-visuals and can be used as a resource for health professionals and educators. To order your copy, send a check or money order to John Muir Medical Film Festival, 185 La Casa Via, Walnut Creek, CA 94598.

AMA materials available

The American Medical Association has available books and assorted pamphlets on how to build a better practice. The educational materials address the issues of starting a practice, practice management, practice finances, insurance, managed care systems, patient relations and closing a practice. To obtain an order form, write the AMA, Book and Pamphlet Fulfillment, P. O. Box 10946, Chicago, IL 60610-0946.

Directory includes doctors

Walking World, a magazine promoting the benefits of walking, is assembling a *Walking Doctors Directory*. This directory will list the names of medical doctors, exercise therapists, and other health professionals who recommend walking to their patients. To include your name in the directory, write *Walking Doctors Directory*, c/o *Walking World*, P. O. Box K, Gracie Station, New York, NY 10028.

Conference on prescriptions

The National Council on Patient

Information and Education will hold its annual conference on Prescription Medicine Information and Education May 8 and 9 in Washington, D.C. For information, write to the council at 666 Eleventh St., #810, Washington, D.C., 20001 or call (202) 347-6711.

New northside office opens

Northside Cardiology, P.C. has opened a new office in the Carmel Medical Center adjacent to St. Vincent Carmel Hospital. The address is 13450 N. Meridian St., Suite 315, Carmel, IN 46032. □

Magazines without cigarette ads

Physicians interested in promoting a smoke-free environment in their offices can substitute magazines that carry cigarette advertisements with a number of publications that do not. The "smoke-free" magazines in alphabetical order include:

Adirondack Life, *Alaska Magazine*, *American Baby*, *American Health*, *American History Illustrated*, *Animal Kingdom*, *Arizona Highways*, *Art in America*, *Audubon*, *Bicycling*, *Boy's Life*, *British History Illustrated*, *Bulletin of the Atomic Scientists*, *Chic*, *Children's Digest*, *Christian Science Monitor*, *Collectibles Illustrated*, *Consumer Reports*, *Crafts*, *Cruising World*, *Dance Magazine*, *Europe*, *Fishing Facts*, *Florida Sportsman*, *Friendly Exchange*, *The Futurist*, *Gentleman's Companion*, *Good Housekeeping*, *Harvard Business Review*, *Health*, *Historic Preservation*, *Horticulture*, *Humpty Dumpty*, *Instructor*, *Jack & Jill*, *Kiwanis*, *The Lion*, *Mad Magazine*, *Missouri Life*, *Model Railroader*, *Modern Photography*, *Mother Earth News*, *Mother Jones*, *National Geographic*, *Natural History*, *Nautical Quarterly*, *Nevada Magazine*, *New Age Journal*, *New Body*, *The New Yorker*, *North American Review*, *Nutrition Action Center*, *Oceans*, *Organic Gardening*, *Parents Magazine*, *Personal Computing*, *Popular Photography*, *Public Interest*, *Railfan & Railroad*, *Ranger Rick's*, *Reader's Digest*, *The Robb Report*, *The Runner*, *Runner's World*, *Sail*, *Sailing*, *Saturday Evening Post*, *Science*, *The Sciences*, *Scientific American*, *Sesame Street*, *Seventeen*, *Skin Diver*, *Smithsonian*, *Sunset*, *Theatre Crafts*, *Travel Holiday*, *Vermont Life*, *Vine Reader*, *Writer's Digest*, *Yankee*, *Zoo News*. □

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 8 — John V. Osborne, Muncie (1991)
 9 — Stephen D. Tharp, Frankfort (1989)
 10 — Frank M. Sturdevant, Valparaiso (1991)
 11 — Laurence K. Musselman, Marion (1989)
 12 — Thomas A. Felger, Fort Wayne (1989)
 13 — Alfred C. Cox, South Bend (1991)
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 Alvin J. Haley, Carmel (1990)
 George T. Lukemeyer, Indianapolis (1990)

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 Annual Meeting: Sept. 13, 1989

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Rosanna Iler, Membership, Auxiliary, Students

Tom Martens, Members Health Insurance, CME Coordinator

Carolyn Downing, Specialty Society Services

Tina Sims, INDIANA MEDICINE

■people

Dr. Arthur J. Sumrall, an Indianapolis dermatologist and cosmetic surgeon, received a Sagamore of the Wabash Award for his commitment and service to the State Board of Cosmetology Examiners and to the citizens of Indiana.

Dr. Clifford W. Fetzers of Carmel has been named medical director of the Summer Trace Retirement Community health care facility in Carmel.

Dr. Douglas A. Kuhn of Indianapolis was inducted as a fellow of the American Academy of Orthopaedic Surgeons at the association's annual meeting in Las Vegas, Nev.

Dr. Randolph W. Lievertz of Indianapolis presented an invitational two-hour lecture to the second and third year residents in family practice at the University of Michigan Medical School. His subject was "Business and Economic Aspects of Solo Private Practice." Lievertz spoke about "Current Concepts in the Management of Menopause" to the medical staff of St. Joseph Hospital in Fort Wayne.

Dr. John L. Zettelmaier of Chesterton has developed a board game called "Scholarship: An American Education." The game is designed to motivate students to win scholarships to American colleges and universities.

Dr. E. Allen Griggs, pathologist at Morgan County Memorial Hospital, contributed chapters on medical records and insurance law to the forthcoming textbook, *Legal Dynamics of Medical Encounters*, published by the American College of Legal Medicine.

Dr. Richard D. Zeph, an Indianapolis facial plastic surgeon, has opened his own practice in the Carmel Medical Center.

Dr. Martin T. Feeney of Indianapolis received the Edward M. Micon Teaching Award at the annual faculty appreciation dinner held by St. Francis Hospital Center in Beech Grove. Also receiving awards for their contribution to the family practice residency program were **Dr. Richard L. Beardsley** of Indianapolis, Family Practice Role Model Award; **Dr. Susan E. Hartman**, Family Practice Research Award; and **Dr. Richard D. Feldman** and **Dr. Richard L. Need**, awards of appreciation from the residents.

Dr. Mark H. Grimm, a member of Pulmonary Associates in Indianapolis, has passed his pulmonary subspecialty board examination.

Dr. James A. Trippi, Indianapolis, has passed the Examination of Special Competency-Cardiac Pacing, conducted by the North American Society of Pacing and Electrophysiology.

Dr. Robert M. Kelsey Jr. is the new president of the medical staff at LaPorte Hospital; **Dr. Aileen G. Stiller** is the vice-president.

Dr. Alfonso E. Lopez of Portland has retired after practicing medicine for 41 years.

Dr. Eugene G. Roach, medical director of the Anderson Center of St. John's in Anderson, has successfully completed the examination of the American Board of Quality Assurance and Utilization Review Physicians.

Dr. Michael L. Neely received the Physician of the Year Award from Medco Center of Danville and Unicare Health Facilities.

Dr. Koduvarthara L. James of Charlestown has been elected to fellowship in the American College of Cardiology.

Dr. Joseph W. Conner, a Seymour ophthalmologist, has been

accepted as a fellow of the American College of Surgeons.

Dr. George H. Rawls, an Indianapolis surgeon, and **Dr. Bettye Rawls-Lloyd**, an Indianapolis ophthalmologist, are featured in an exhibit titled "Black Achievers in Science" at the Children's Museum in Indianapolis. Dr. George Rawls, president-elect of ISMA, is the father of Dr. Bettye Rawls-Lloyd.

Dr. Henry D. Covelli was elected president of the medical staff of Community Hospital of Anderson; others elected were **Dr. Stephen J. Wright**, chief of staff; **Dr. Timothy L. Hobbs**, vice-president; and **Dr. John D. Jones** as secretary-treasurer.

Dr. Samarjit Singh Ghuman, Valparaiso, was named a fellow of the American College of Surgeons.

Dr. Virgil D. Stoltzfus of Chesterton has retired as medical director of Bethlehem Steel's Burns Harbor plant; he was associated with Bethlehem Steel for 25 years.

Dr. W. Robert Orr, **Dr. Jacob Rosenwasser**, **Dr. Robert F. Reed** and **Dr. Richard A. Schaphorst** were honored for their many years of service to St. Joseph Hospital of Mishawaka.

Dr. Douglas J. Wilson is the president of the medical staff of St. Joseph Hospital in Mishawaka for 1989-1990; other officers are **Dr. John J. Reed**, vice-president; and **Dr. Lynn D. Day**, secretary-treasurer.

Dr. Robert J. Kunz was elected chief of staff at Witham Memorial Hospital in Lebanon; **Dr. Paul H. Schaak** is the secretary-treasurer.

Dr. Stafford W. Pile is the new president of the medical staff of St. Francis Hospital Center in Beech Grove; other officers are **Dr. David J. Need**, vice-president, and **Dr. Bryan T. Burney**, secre-

Physician Recognition Award recipients

The following ISMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned and is acceptable proof in most states requiring CME in re-registration that the mandatory hours of CME have been accomplished.

Allen, Donald R., Evansville
Blair, William E., LaPorte
Brennan, Thoms F., Lafayette
Burrows, Linda S., Indianapolis
Calla, Delicia B., Indianapolis
Campbell, Betty J., Terre Haute
Chandler, Jeffery R., Evansville
Crebo, Alan R., Kokomo
Fessler, Gordon S., Aurora
Fisher, Pierre J., Marion
Gillespie, Douglas B. Jr.,
Terre Haute
Hallal, Eli, New Albany
Hamm, Charles W., Indianapolis
Hogan, Michael A., Indianapolis
Kuhlman, Deborah S., Kokomo
Lee, Randall A., Martinsville

Markham, Raymond E. Jr., Indianapolis
Mitchelson, John E., Indianapolis
Miyamoto, Richard T., Indianapolis
Morton, Philip M., Indianapolis
Obando, Guillermo, Bedford
Patel, Danyanti R., Anderson
Price, Francis W., Indianapolis
Purcell, Richard J., Griffith
Ridzinski, Walter W., Valparaiso
Subhasiriwat, Man, Crown Point
Theobald, Dale E., Indianapolis
Tritch, Dan L., Fort Wayne
Walker, Jan M., Fort Wayne
Walthall, Gerald C., Indianapolis
Weaver, R. Wyatt Jr., Angola
Wilson, Franklin D., Indianapolis

tary-treasurer.

Dr. Alexander S. Williams was elected president of the medical staff of St. Mary Medical Center, Gary and Hobart; other officers are **Dr. P.K. Stang**, president-elect, and **Dr. Mikhail F. Jeha**, treasurer.

Dr. William R. Powers of Lyons was appointed to the Vincennes University board of trustees.

Dr. John T. Hinton, College Corner, was named a Sagamore of the Wabash; he is vice-chairman of the Indiana Medical Licensing Board and the Union County health officer.

Dr. Steven E. Stoller has received the Paul S. Rhoads Award from Reid Memorial Hospital in Richmond; the award is given for an outstanding lecture in continuing medical education.

Dr. John L. Vogel has retired after practicing internal medicine 33 years in Columbia City.

Dr. James R. Drake was elected president of the medical staff at St. John's Health Health Care Corp. in Anderson; other officers are **Dr. Phillip E. Goshert**, president-elect, and **Dr. Ronald J. Beahm**, secretary-treasurer.

Dr. Daniel W. Kletzing was elected president of the medical staff at St. Joseph's Medical Center in South Bend for a two-year term; other officers are **Dr. Jan C. Green**, vice-president, and **Dr. Paul F. Howard**, secretary-treasurer.

Dr. John C. Johnson of Valparaiso was elected secretary-treasurer of the board of the American College of Emergency Physicians.

New ISMA members

Ravi S. Bhagwat, M.D., Munster, internal medicine.

James S. Cook, M.D., Danville, neurology.

Matthew P. Datzman, M.D., Warsaw, family practice.

Edgar D. Dizon, M.D., Valparaiso, pediatrics.

Elsa N. Fisk, M.D., Indianapolis, anesthesiology.

Betty-Jo Rawls Lloyd, M.D., Indianapolis, ophthalmology.

James E. Maresh, M.D., Evansville, general surgery.

Gary S. Midla, D.O., Monrovia, family practice.

Christopher E. Miller, M.D., Richmond, emergency medicine.

Jon D. Misch, D.O., Cedar Lake, family practice.

Paul D. Nora, M.D., Harlan, family practice.

Roberto G. Posada, M.D., Fort Wayne, general surgery.

George Restrepo, D.O., South Bend, family practice.

Robert J. Riley, M.D., Indianapolis, family practice.

Elaine K. Ristinen, M.D., Bloomington, anatomic and clinical pathology.

John W. Scott, M.D., Indianapolis, urological surgery.

Richard L. Stout, M.D., Mooresville, colon and rectal surgery.

Kem E. Templeton, M.D., Indianapolis, neonatal and perinatal medicine.

Robert S. Tomchik, M.D., Goshen, general preventive medicine.

Kupusamy Umapathy, M.D., Hammond, internal medicine.

Ruth S. Vandergrift, M.D., Syracuse, family practice.

Marc B. Willage, M.D., Indianapolis, occupational medicine.

■ obituaries

Arthur L. Drew, M.D.

Dr. Drew, 73, a retired child neurologist, died in his home Feb. 7.

He was a 1941 graduate of the Columbia University School of Medicine. He was director of pediatric neurology at the Indiana University Medical Center from 1961 to 1980. He also was associate director of the I.U. psychiatric research program from 1960 to 1973 and coordinator of the I. U. retardation program from 1967 to 1980.

Dr. Drew served on the Governor's Advisory Council on Mental Retardation from 1962 to 1971 and was a member of the promotion and admission committee of the I.U. School of Medicine. He retired in 1980.

C. William Goebel, M.D.

Dr. Goebel, 67, a Fort Wayne pediatrician, died Jan. 24 in his home.

He was a 1944 graduate of the Indiana University School of Medicine and was an Army Air Force veteran of World War II and the Korean War.

Dr. Goebel worked for Lutheran, St. Joseph and Parkview Memorial hospitals in Fort Wayne. He was instrumental in founding the Three Rivers Health Clinic and the Fort Wayne Well-Baby Clinic and later founded Fort Wayne Allergy Consultants, Inc.

Nelson N. Kauffman, M.D.

Dr. Kauffman, 74, a retired Indianapolis obstetrician and gynecologist, died Dec. 27 at the Roudebush Veterans Administration Medical Center.

He was a 1938 graduate of the Indiana University School of Medicine. Dr. Kauffman was an

Army veteran of World War II and a survivor of the Bataan death march. As a prisoner of war in Japan from 1942 to 1946, he risked his life for other prisoners by dealing with the Japanese to obtain food and medical supplies.

Dr. Kauffman retired in 1972.

James M. Leffel Jr., M.D.

Dr. Leffel, 79, a retired Zionsville surgeon and former chief of surgery at Methodist Hospital, died Jan. 5.

He was a 1935 graduate of the Indiana University School of Medicine and a recipient of a fellowship in surgery from the Mayo Foundation. Dr. Leffel served at the Mayo Clinic in Minnesota where he received a master of science degree in medicine from the University of Minnesota. He was an Army Medical Corps veteran of World War II.

Dr. Leffel was former president of the Marion County Medical Society, a fellow in the American College of Surgeons and a member of the American Medical Association. He retired in the early 1970s and was a member of the ISMA Fifty Year Club.

Yng-Cherng Lin, M.D.

Dr. Lin, Warsaw, Ind., died Oct. 14, 1988.

He was certified by the American Board of Surgery. Dr. Lin was a 1967 graduate of Taipei Medical College in Formosa.

Arthur C. Payne, M.D.

Dr. Payne, 93, a retired East Chicago physician, died Feb. 1.

He was a 1922 graduate of the Howard University School of Medicine. He was the first black member of the board of directors of the county-owned Parramore

Hospital in Crown Point. He served as president of the Parramore board of directors for four one-year terms.

Dr. Payne practiced medicine for nearly 58 years until his retirement in 1982. He was a member of the ISMA Fifty Year Club.

Andrew Petrass, M.D.

Dr. Petrass, 97, a retired South Bend physician, died in his home Jan. 21.

He graduated from the University of Illinois College of Medicine in 1920. He was a member of the American Medical Society, the Indiana State Medical Association and the St. Joseph County Medical Association.

Dr. Petrass retired in 1983 and was a member of the ISMA Fifty Year Club.

Eli Rubens, M.D.

Dr. Rubens, 85, a retired South Bend pediatrician, died Jan. 5 at his home in Sarasota, Fla.

He was a 1928 graduate of Northwestern University Medical School. He served as lieutenant commander in the Navy Medical Corps during World War II.

Dr. Rubens practiced pediatrics in South Bend for 30 years. He served as president of the medical and dental staff of South Bend Children's Dispensary Association. He taught pediatrics and was on the staffs of Memorial Hospital, St. Joseph's Medical Center and Indiana State Hospital. He retired in 1975.

Donald E. Wood, M.D.

Dr. Wood, 79, a retired Indianapolis internist, died in his home Jan. 31.

He was a 1935 graduate of the Indiana University School of Medicine and was a past presi-

dent of the Marion County Medical Society and the Indiana State Medical Association. He served on the American Medical Association's board of trustees from 1971-1974 and was a former chairman of the American Medical Political Action Committee. He was an Army veteran of World War II.

Dr. Wood received the Vital Award from the Marion County Chapter of the American Heart Association in 1982. He also received an honorary degree from Butler University in 1971.

Dr. Wood practiced 52 years before retiring in 1988. □

Memorials: Indiana Medical Foundation

The Indiana Medical Foundation, Inc., was formed by the Indiana State Medical Association "for religious, charitable, scientific, literary or educational purposes." It provides financial assistance to support the educational mission of INDIANA MEDICINE.

Contributions made to the foundation are deductible by donors in accordance with the Internal Revenue Code. Gifts are deductible for federal estate and gift tax purposes.

The foundation is pleased to acknowledge the receipt of gifts in remembrance of the following individuals:

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THE INDIANA MEDICAL FOUNDATION, INC.
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A foundation for charitable, educational, and scientific purposes, organized by the ISMA as an endowment fund to support the educational mission of the Association and INDIANA MEDICINE.

Bequests, legacies, devises, transfers or gifts to the Foundation or for its use are deductible for federal estate and gift tax purposes, in accordance with the Internal Revenue Code.

The Foundation is managed by a board of directors that comprises the members of the ISMA Executive Committee. At present, proceeds from the Foundation investments are awarded to INDIANA MEDICINE to further the continuing medical education program.

Memorial contributions made to the Foundation in lieu of flowers will be acknowledged by the secretary in a letter to the family of the deceased.

*"for religious, charitable, scientific,
literary or educational purposes"*

Three ways to better training

Arthur R. Pell, Ph.D.
Consultant, Dale Carnegie & Ass.

When Bob Taylor started his new job as a sales representative for Associated Merchandising Corporation, he expected to be given a brief orientation on company products and sent into the field. After all, he was an experienced salesperson. Instead his regional sales manager, Ken Thompson spent several weeks training him.

Before allowing Bob to meet any customers, Ken questioned Bob at length about his sales techniques. He role-played a variety of sales situations with him. After analyzing Bob's methods of selling, he spent some time suggesting changes that he felt would make him a more effective salesperson.

Ken's colleague, Sam Schultz, used to tease Ken about the time he spent with his new people. "Ken, you're wasting your time. Get them out in the field as soon as you can. Let them sink or swim. If they start sinking, go out and save them. That's the way to find out who is worth saving. Concentrate on building them up instead of using the limited time with people who may not need it."

Ken didn't agree. "Let's look at the bottom line. Sure, I have had failures—people who don't make the grade. But once my people complete the training I give them, they become more successful. My turnover is the lowest in the company. I am not wasting any time because the great amount of time I spend with each new person when they start means considerably less time needed to save people from drowning. That's why my region has led this company year after year."

Rule No. 1 for better training:

Whether one is teaching a trainee the basics of a new job or an experienced person new information or methods, it pays to give each person as much time as needed up front to assure they are fully capable of performing the job. It will pay off in time saved later on.

Maggie Olsen prided herself on her success in managing the Data Entry section of her department. When asked to what she attributed her success, she replied. "I look upon the job of a manager not as that of a boss, but as that of a coach."

She amplified: "I don't mean the coach of a professional team, but a high school team. When the high school basketball coach puts a new team together at the beginning of the school year, most of the kids already know how to play basketball, but the coach takes it from the beginning and teaches them the basics so they perform to his or her satisfaction. I do the same with my people. Even if they have previous experience on our type of equipment, I insist that they are shown how to perform the way we accept in our department."

"Like any coach or teacher, I find I must be very patient when I train a new employee. I can't rush them. Some people are slow learners, but my experience has shown me that sometimes those slow learners become my best producers."

"Once a person has learned the basics, I keep coaching to train them in short-cuts and in the other special factors that make our job special. A coach can never stop training her people." Maggie continued: "Another area in which I emulate the coach is handling people who get into slumps. Data entry is sometimes tedious and my operators get depressed. I give them pep talks just as the coach does when a player gets into a slump. It's not 'rah, rah team' but a reinforcement of my confidence in them and a reminder of their value to the department. It really helps them get back to productivity."

Rule No. 2 for better training:

The manager should emulate the coach. By coaching instead of bossing, people will be better trained and will continue to perform more effectively.

When Manuel Gomez was hired as an order picker at Holmes Wholesale Hardware Company, he was afraid he would fail and be fired again. The boss in his last job was very demanding and when Manuel didn't learn the job fast enough to please the boss, he was fired. This job was even more complicated than the former one and he wasn't sure he could learn it.

When Manuel reported to work the first day, the supervisor introduced him to a fellow-worker, Tom Crawley, who had been on the job several years. The boss told Manuel he was putting him in Tom's hands. Tom would act as his "big brother" to help him get started right on the job and to be available to him at any time he had a question or a problem he couldn't handle himself.

During the first several weeks, in addition to the regular training from the boss, Tom gave Manuel several suggestions that made the job much easier. When he was faced with something he didn't understand, instead of having to go to the boss, Manuel went to Tom for help. Tom was always around, so he did not have to wait until the boss was in his section. This enabled Manuel to master the job more rapidly and without the feeling of embarrassment he had in previous jobs when he had to tell the supervisor he did not fully understand what he had been taught.

In addition to helping Manuel learn the tricks of the trade, Tom introduced him to other employees and told him about the social and athletic activities the company provided. Within a few months, Manuel was an effective and happy employee, doing a job he came to enjoy with co-workers who became his friends.

When Manuel received his annual performance appraisal, his boss told him how pleased he was with his progress and asked him if he would like to be the sponsor of a new employee when the occasion arose. This was the highest praise Manuel could have received.

Mentors are valuable, not only in training new employees, but in helping persons newly promoted to adjust to their new responsibilities. In choosing people to be mentors, it is necessary that they meet these criteria: (1) They should be highly proficient on their job. (2) They should have strong positive attitudes toward the company and the job. (3) They should be warm, empathetic individuals and (4) They should be given some orientation and training in the techniques of mentoring.

Rule No. 3 for better training:

A co-worker assigned as a mentor, sponsor or big brother or sister can help a new employee adapt more rapidly and can assist the manager in training, orienting and coaching that person.

By implementing these three approaches to better training: more time up front, acting as a coach not a boss and using mentors or sponsors to assist you, you will find your people are being trained more rapidly and more effectively and it pays off in higher morale, greater productivity and more efficient use of your valuable time.

Pocket/purse size reprints may be purchased (10 for \$10.00) or (25 for \$20.00) from Dale Carnegie & Associates, Inc. 1475 Franklin Avenue, Garden City, NY 11530

classifieds

OCCUPATIONAL MEDICINE PHYSICIAN - Searching for occupational physician to operate a hospital-based clinic in Cincinnati. Solo practice serving about 300 companies with approximately 45-50 pre-employment physicals and injured workers seen per day, Monday through Friday. Strong clinical skills and occupational experience required. Practice involves full spectrum of occupational health issues. Competitive salary and benefits. Please forward resume to Bethesda Healthcare, Corporate Services Building, 619 Oak St., Cincinnati, OH 45206 or call (513) 569-5150.

OHIO - Emergency physician. \$45 to \$48 per hour. ACLS certification required. ATLS preferred. Primary care experience a plus. Excellent medical staff backup for major medical/surgical emergencies. Moderate volume ER. Benefits include four weeks vacation, incentive bonus during the first year, paid malpractice and an incentive plan. Contact: Emergency Consultants, Inc., 2240 S. Airport Road, Room 20, Traverse City, MI 49684 -1-800-253-1795 or in Michigan 1-800-632-3496.

RADIOLOGIST Board-certified. Excellent opportunity for hospital-based department director. Hospital is a 284-bed facility and includes open heart surgery, cancer treatment center and MRI services. Opportunity to put own group together. Position available now. Contact Jerry Dooley, Administrator, Terre Haute Regional Hospital, 601 Hospital Lane, Terre Haute, IN 47802. Phone (812) 232-0021.

GENERAL SURGEON, BE/BC to join me in my solo general surgery practice. Small town (7,000) in northeast Indiana. A great lake area, good place to rear a family. Would be nice if you shared my interests in aviation. Send CV to Joseph A. Greenlee Jr., M.D.,

F.A.C.S., 439 Water St., Kendallville, IN 46755 or call (219) 347-3093, home, or (219) 347-2231, office.

FOR SALE: Special health clinic established nine years. Licensed by Cabinet for Human Resources, Commonwealth of Kentucky. Located near Saints Mary and Elizabeth Hospital in Louisville, Ky. Located in 2,600 square-foot, attractive free-standing building, also for sale. Large waiting room, clerical area, lab, private employees' rest room, public men's and women's rest rooms, x-ray room with dark-room, physician's dictation room and three exam rooms. Equipment includes x-ray with automatic processor, EKG, PFS, Doppler and other miscellaneous medical equipment. Currently performing medical examinations and supporting studies for Social Security disability, railroad retirement, and U.S. Department of Justice, Immigration and Naturalization Service. Approximately \$100,000 revenue per year. Please contact Mr. Lobe, (502) 499-0111.

FAMILY PRACTICE OPPORTUNITY - BC/BE; north central Indiana; flexible ER schedule for fully accredited county hospital in return for exceptional income, opportunity to set up own zero overhead practice, comprehensive benefits with all factors negotiable to meet specific practitioner needs. Send CV or contact collect: James Wyatt, Corporate Staffing Resources, 420 S. Fourth St., Elkhart, IN 46516 - (219) 522-2396.

EMERGENCY PHYSICIAN - Excellent opportunity for experienced emergency physician. Full-time position available in three-man group expanding to four. Guaranteed rate of compensation. Malpractice insurance provided. 150-bed hospital with 15,000 ER patients per year. C/O Mark G. Doyle, M.D., 1000 N. 16th St., New Castle, IN 47362 - (317) 521-1159.

FAMILY PRACTICE/INTERNAL MEDICINE - Attractive opportunities for BC/BE family practice and internal medicine physicians in the Midwest. Contact Bob Strzelczyk to discuss your practice requirements and these positions. Strelcheck & Associates, Inc., 12724 N. Maplecrest Lane, Mequon, WI 53092; 1-800-243-4353.

IM/ENDOCRINOLOGIST needed for small group practice in attractive west central Illinois community of 80K draw near metro areas. Develop endocrinology services for 200+ bed hospital sending referrals 45 miles away. General internist also needed. Excellent financial package. Contact Mary Wynkoop, Tyler & Company, 9040 Roswell Rd., Atlanta, GA 30350. Call (404) 641-6411.

FAMILY PHYSICIAN, general practitioner or internist wanted to join three-man group in west central Indiana. Competitive salary and percentage arrangement. Partnership arrangement possible after one year. Contact Frank Swaim, M.D., Parke Clinic, 503 Anderson St., Rockville, IN 47872; (317) 569-3182.

THREE SETS of green exam tables, sidetables and waste baskets by Welch Allen. Excellent condition. Please call (317) 646-8268 weekdays from 9 a.m. to 5 p.m.

INDIANAPOLIS, INDIANA - MetroHealth, a division of Methodist Hospital, is seeking board certified or board eligible physicians in OB/GYN, internal medicine, family medicine and dermatology (part-time position). MetroHealth, an established multi-specialty physician group, offers an excellent blend of practice and lifestyle, professional liability and competitive salary and benefits. Please contact: Lowell M. Weiner, M.D., Medical Director, MetroHealth, P.O. Box 1367, Indianapolis, IN - (317) 929-2713.

FAMILY PRACTICE PHYSICIAN

wanted for part-time, two or three days per week, office only, occasional night call. Potential \$50,000 per year income. To join practicing physicians. Excellent part-time job for a physician who is the parent of growing children. Greenfield is 15 minutes from Indianapolis on Interstate 70 and provides a rural atmosphere. New office with excellent facilities. Write: James T. Anderson, M.D., 400 Green Meadows Drive, Greenfield, IN 46140.

ILLINOIS - Great opportunity for an experienced emergency physician to join a career emergency group practicing in western and southwestern suburbs of Chicago.

Please contact Debbie Aber (312) 327-0777 or send your CV to: Emergency Medicine S.C., 2142 N. Sedgwick St., Chicago, IL 60614.

BE A PART of an exciting new community developing in north central Indiana. A professional complex intended to house medical/dental specialists is currently under construction. Rapidly growing population of middle and upper class residents. Office space can be built to your specifications. Contact JCM Realty: (219) 232-2314.

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IMMEDIATE CARE PHYSICIANS

WANTED - Need to be trained and/or experienced in areas of medicine that deal with acute/urgent care, such as minor trauma, acute illnesses and injuries and

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INTERNIST BE/BC - North Shore Internal Medicine, PC is seeking an energetic general internist to enjoy the benefits of a rapidly expanding practice. New office close to hospital. Michigan State Medical School Campus. Send resume to 2420 First Ave. South, Escanaba, MI 49829 - (906) 786-1563.

RADIOLOGIST BC/BE - Terre Haute Regional Hospital. Quick partnership, excellent income and amicable working conditions. Contact: Benny S.P. Ko, M.D., 2929 S. First St., Terre Haute, IN 47802.

INTERNIST - Indianapolis practice. Seeking internist with an interest in geriatrics. Excellent salary and benefits including CME and malpractice. Flexible scheduling. CV to Judy Burnett, 4930 N. Pennsylvania, Indianapolis, IN 46205.

RENT LUXURIOUS FLORIDA condominium, Hutchinson Island. Two bedroom, two bath. On golf course, pool, private beach. Call Tom Stayton, (317) 237-4535.

EMERGENCY PHYSICIAN, Terre Haute. Career-oriented, full-time emergency physician, immediate and July '89 positions available. 30,000 visit ED. Excellent compensation, comprehensive benefits, paid malpractice. Send CV or contact: Sherry Bussel, Midwest Medical Management, Inc., 528 Turtle Creek Drive, Suite 4, Indianapolis, IN 46227 - (317) 783-7474.

CENTRAL INDIANA - Physician-owned emergency group accepting applications for full-time, career-oriented emergency physicians. Flexible work schedules and excellent benefit package. Part-time and directorship positions also available. Send CV or contact Sherry Bussel, Midwest Medical Management, Inc., 528 Turtle Creek, North Drive, Suite F-4, Indianapolis, IN 46227 - (317) 783-7474.

FAMILY PHYSICIAN, BE/BC, for well-established, growing practice in southern Indiana. First-year guarantee, malpractice, benefits. Small city living conditions within one hour of large cities. Physicians who desire a challenging and rewarding practice are encouraged to submit a letter with CV to: Administrator, Ohio Valley Medical Group, 722 West Main St., Madison, IN 47250.

FOR SALE: Lifeline multi-function ECG testing system and treadmill, fully automated, for resting and stress ECG procedures, capable of Holter monitoring. Call (317) 674-7771.

FAMILY PRACTICE FOR SALE - Small town, high income. Hospital in town, OB/ER/ optional. Hospital may assist financially. Chicago 90 minutes. South Bend 60 minutes. Reply: P.O. Box 93, Valparaiso, IN 46384.

INTERNIST/OR INTENSIVIST: BC/BE to join a busy three-man practice with special interest in hospital intensive care, plus consultative and primary care practice in the Indianapolis area. Will offer partnership. Position available immediately. Reply: Box 19616, Indianapolis, IN 46219. □

IMPORTANT NOTICE

The Medical Licensing Board of Indiana will send renewal notices May 1 for license renewal fees due June 30, 1989. There is no grace period this year. Any physician who does not pay the renewal fee by the June 30 deadline will have to pay a \$50 penalty in addition to the \$50 renewal fee. If you have moved since last receiving your renewal registration form, please notify the Medical Licensing Board.

A FINAL REMINDER: Failure to renew your license will render your license to practice medicine invalid.

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So are thousands of others. Reach more than 6,000 physicians with a display ad in *INDIANA MEDICINE*, the journal of the Indiana State Medical Association.

For additional information, contact *INDIANA MEDICINE*, 3935 N. Meridian St., Indianapolis, IN 46208 - (317) 925-7545.

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Are you moving?

If so, please send change of address to the Indiana State Medical Association, Membership Department, 3935 N. Meridian St., Indianapolis, IN 46208, at least six weeks before you move.

Name: _____

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IMPORTANT - Attach mailing label from your last copy of *INDIANA MEDICINE* here:



VASOTEC®

(ENALAPRIL MALEATE) MSD

Contraindications: VASOTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

Warnings: *Angioedema* Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Heart failure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed. Caution should be observed when initiating therapy (See DOSAGE AND ADMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in heart failure patients), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments. (See PRECAUTIONS, Drug Interactions, and ADVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. If excessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC, which usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

Precautions: *General Impaired Renal Function* As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION.)

Hyperkalemia Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation.

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See Drug Interactions.)

Surgery/Anesthesia In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients

Angioedema Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure. Patients should be advised to consult with the physician.

Hyperkalemia Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

NOTE As with many other drugs, certain advice to patients being treated with enalapril is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions

Hypotension Patients on Diuretic Therapy Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

Agents Causing Renin Release The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methylglucosides, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. Although a causal relationship has not been established, it is recommended that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be monitored frequently.

Pregnancy—Category C. There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies in pregnant women. VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers. Milk in lactating rats contains radioactivity following administration of 14 C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use. Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 298/1 patients.

Hypertension. The most frequent clinical adverse experiences in controlled trials were headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

Heart Failure. The most frequent clinical adverse experiences in both controlled and uncontrolled trials were dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category:

Cardiovascular Myocardial infarction or cerebrovascular accident, possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, Hypotension), cardiac arrest, pulmonary embolism and infarction, rhythm disturbances, atrial fibrillation, palpitation.

Digestive Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION), prostatic hypertrophy.

Respiratory Bronchospasm, rhinorrhea, asthma, upper respiratory infection.

Skin Herpes zoster, pruritus, alopecia, flushing, photosensitivity.

Other Muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus.

A symptom complex has been reported which may include fever, myalgia, and arthralgia, an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy.

Angioedema Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension. In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings

Serum Electrolytes Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 11% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown) In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported.

Liver Function Tests Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: Hypertension In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued for two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed. If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, Drug Interactions.)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium. (See PRECAUTIONS.)

Dosage Adjustment in Hypertensive Patients with Renal Impairment The usual dose of enalapril is recommended for patients with a creatinine clearance > 30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤ 30 mL/min (serum creatinine ≥ 3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, Drug Interactions.) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, Pharmacodynamics and Clinical Effects.) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia In heart failure patients with hyponatremia (serum sodium < 130 mEq/L) or with serum creatinine > 1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, Heart Failure, WARNINGS, and PRECAUTIONS, Drug Interactions.) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg. For more detailed information, consult your MSD representative or see Prescribing Information. Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, PA 19386.

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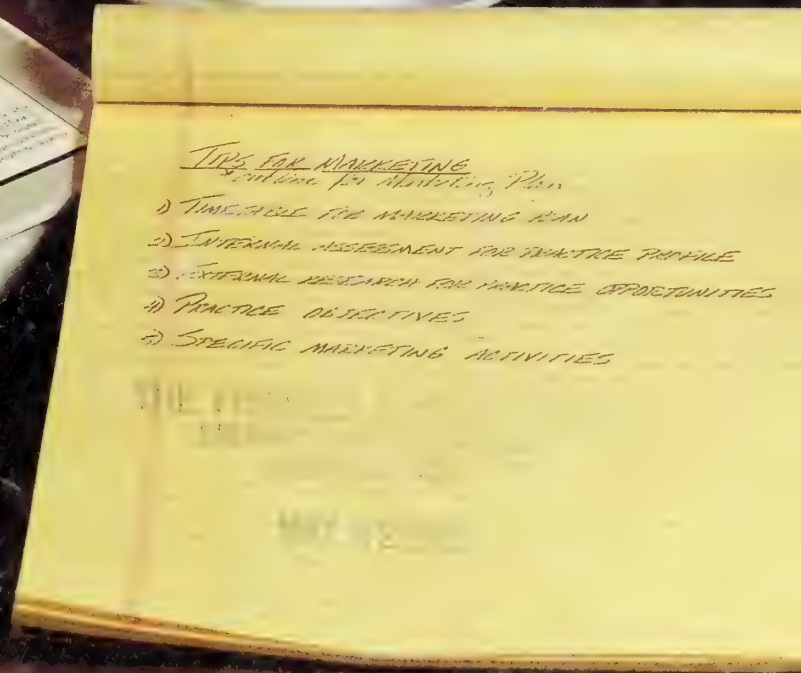
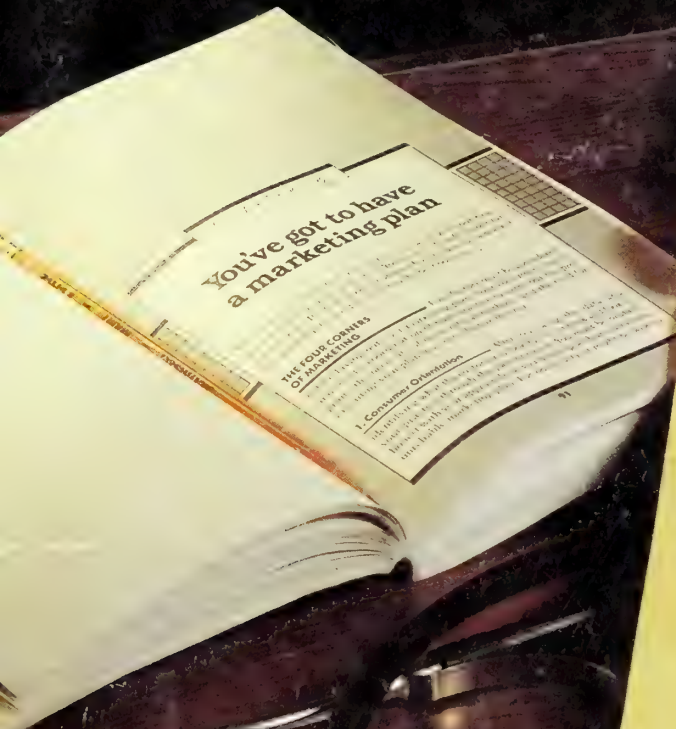
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The Journal of the Indiana State Medical Association

May 1989

Vol. 82, No. 5



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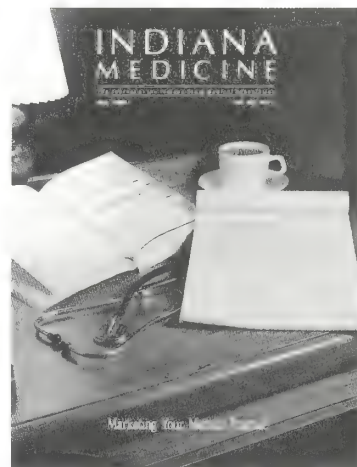
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All issues since 1967 are available on microfilm from University Microfilms International, 300 N. Zeeb Road, Ann Arbor, MI 48106. Indexed in *Index Medicus* and *Hospital Literature Index*.

Advertising rates and data available upon request

Infectious waste guidelines available from ISMA

"Suggestions for Developing Your Infectious Waste Policies" explains the requirements of Indiana's new infectious waste rule, which is now in effect. The new rule requires medical practices to develop written policies and procedures for handling infectious waste generated by their office. Doctors are required to make certain that any employee who might come in contact with infectious waste has been trained in the policies and procedures that have been developed. The law went into effect Feb. 16 and provides a \$1,000 a day fine for noncompliance. A copy of the publication was enclosed with the April issue of *ISMA Reports*. If you would like additional copies, or if you would like to order biohazard stickers to use in labeling infectious waste containers, call ISMA's Public Relations Department at 1-800-382-1721 or (317) 925-7545. The charge for 10 labels is \$1.

Study pinpoints attitudes about nursing

Nurses are not perceived as being highly respected, highly appreciated nor highly paid. These were some of the survey findings on the image of nursing, commissioned by the Indiana Hospital Association and conducted by Sigma Theta Tau International, the honor society of nursing. The survey also indicated that the public believes nurses have little power to effect change and have higher safety risks in their work environments. The survey was undertaken so data could be used to clarify public misperceptions about nursing and to develop ways to make nursing more competitive with other professions. Targeted groups surveyed included students in grades six through 12, college freshmen, parents, teachers, guidance counselors and school nurses. Copies of the study, titled "Attitudes, Values, and Beliefs of the Public in Indiana Toward Nursing as a Career: A Study to Enhance Recruitment into Nursing," are available from Sigma Theta Tau International, 1200 Waterway Blvd., Indianapolis, IN 46202. The cost is \$10 per copy prepaid.

To pay or not to pay for durable medical equipment

Televised advertisements for durable medical equipment indicating that Medicare will pay for the devices may not be accurate. To help alleviate the confusion prompted by the ads, ISMA will produce a series of flyers specific to each type of durable medical equipment. The first will appear in the May issue of *ISMA Reports*, and it pertains to lift chairs. Generally, Medicare will pay for lift chairs if: The patient has severe arthritis of the hip or knee or has a severe neuromuscular disease; is incapable of standing up from a regular armchair without the assistance of another person, and once standing, can walk unassisted. The Medicare carrier will send patients and physicians questionnaires to determine patients' functional capabilities. Physicians must return the questionnaires within 30 days for payment to be considered. □

■ medical museum notes

Charles Bonsett, M.D.
Indianapolis

Frank Peyton, M.D., a Lafayette gynecologist who served with the 15th Evacuation Hospital, has written a book about his experiences during World War II. *A Surgeon's Diary* details Dr. Peyton's travels through North Africa, Sicily and Italy.

Dr. Peyton received his World War II notice in July 1942, three and a half years after he started his own practice in Lafayette, Ind. He received a medical degree in 1934 from the University of Colorado, served his internship and residency at the Baltimore, Md., city and university hospitals and passed his board examinations.

Capt. Frank Peyton was sent to O'Reilly General Hospital in Springfield, Mo., for basic training and Fort Meade, Md., for shock officer training: "I was trained to evaluate the casualties, degree of

shock and not to spend too much time on a very serious casualty..."

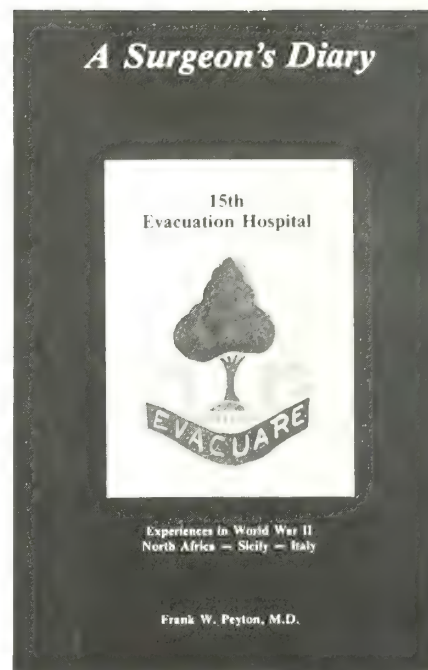
In time, Capt. Peyton was assigned to the 15th Evacuation Hospital, which left for North Africa in early February 1943. At this time, the diary begins and continues until mid July 1945. Here are some excerpts: (Tunis)

"On 20 April, the entire hospital moved northward by convoy for 227 miles. This movement was made through south Ahras, Iamy and Roum-es-Souk. The trip was over hazardous mountain terrain, under blackout, through an unfamiliar section of North Africa to the selected site 11 miles north of Beja. The 34th and First Infantry and the First Armored Divisions were in battle position between the hospital and the front line, only eight miles away ...

"Friday, April 23, 1943. This a.m. ward is full. Boys started arriving during the night and what a life. Eighteenth Reg. of Div. I, esp. ground infantry caught hell. They set out to take a hill at the same time Germans did. Beginning at 3 a.m., a continual barrage has existed with continual reverberations. Three hundred and nine patients the past 24 hours and filled us up. No place to evacuate to and about 250 needing surgery and plenty bad too ..."

By August of 1943 the war had moved into Sicily.

"August 3, 1943. Went to bed at midnight and during breakfast had an air raid ... Just before lunch, I heard an awful commotion ... Then, three-star Gen. Patton came dashing over to my ward in his polished boots, gabardine, pressed ribbon-bedecked uniform, pearl-handled revolver, custom-made belt and highly glit-



The cover of Peyton's diary.

tering buckle, soft pig-skin gloves. What a sight! He made rounds asking every patient what was wrong. He cursed one out (who was obviously neuro-psychiatric) and told him to go back and fight ... The most pompous, flamboyant, egotistical person I ever saw or hope to see."

In time, the hospital moved to Italy, including Anzio, Rome and Florence.

In his book, Dr. Peyton describes the experiences of the 15th Evacuation Hospital and the 38,305 patients it served. The book, which sells for \$19.50, is available from the gift shops of Home Hospital, 2400 South St., Lafayette, IN 47904 - (317) 447-6811 and St. Elizabeth Hospital, 1501 Hartford St., Lafayette, IN 47904 - (317) 423-6011. □



Frank Peyton

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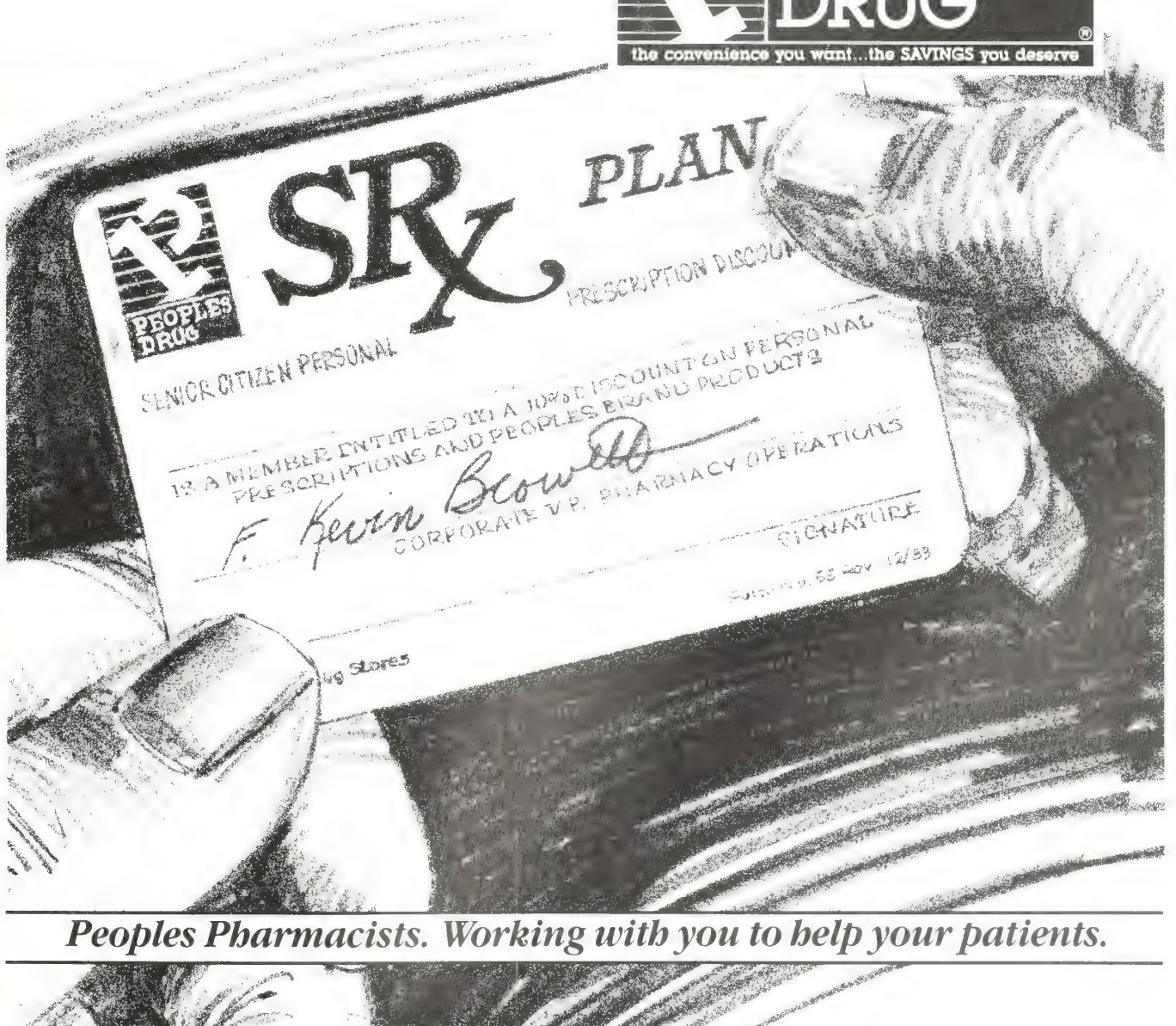
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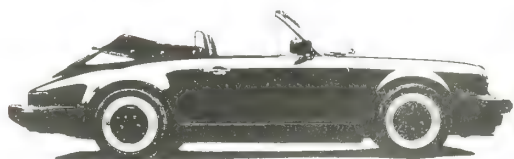
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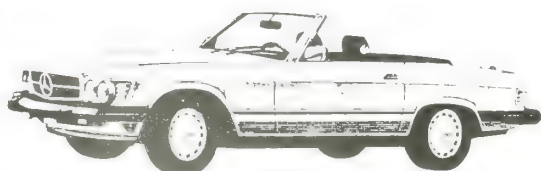


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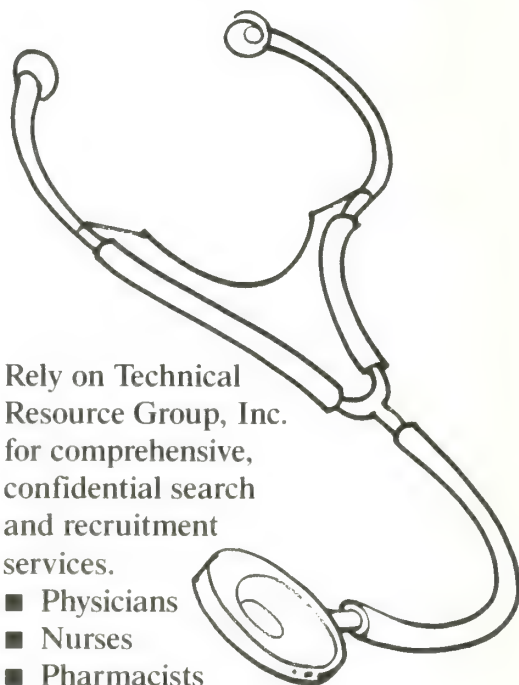
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■ what's new

Elbe-Cesco, Inc. has a new system designed to control and provide billing of all controlled substances. It is a system to correlate pharmacies, nursing stations and business offices for greater control, accuracy, efficiency and profit. Each time a charge slip is completed, a permanent record of that transaction is automatically stored on a control journal, to build and maintain a record of all dispensed controlled substances for audit purposes. The system, which is available for \$79, is compatible with either computerized or manual account systems.

Brentwood Instruments has announced a new RhythmScan™ Super Imposition Holter System that combines the latest technology in holter monitoring with visual super imposition scanning. The new system converts the real-time analog signal and displays it on the CRT monitor, using state-of-the-art digital technology. A new ambulatory blood pressure system also has been introduced. It is small, lightweight and uses the latest solid state logic to precisely record up to 300 blood pressure measurements over 72 hours.

Mada Medical Products has introduced The 2200 Series of disposable manual resuscitators. These single-use units are transparent and feature anti-locking one-way valves that prevent lock-up under high-flow conditions. Each has a transparent cushioned mask that conforms to any patient's face. It is available in adult and pediatric models, with either a volume oxygen reservoir bag or a flexible hose reservoir.

Mead Johnson Pharmaceuticals has received approval by the U.S.

Food and Drug Administration to market Desyrel® DiviDose® 300 mg. Desyrel is an antidepressant that is effective in relieving depression and depression with anxiety. It is associated with a low incidence of disruptive side effects. A 300 mg tablet constitutes one dosage and may be divided into three 100 mg doses, two 150 mg doses or one 200 mg dose. Desyrel® DiviDose® 300 mg was scheduled to be available in January 1989.

Promedix International Corp. has announced ENCAP™, an entirely new, sanitary method of containing and picking up spilled body fluids. It is a chlorinated encapsulating powder that makes it possible to contain spills of blood, vomit or urine. The encapsulating feature congeals the liquid to contain the spill in a small area. The congealed matter can then be scooped up, and the area can be cleansed and sanitized. For product information or samples, write to Promedix International Corp., 80 Cutter Mill Road, Great Neck, NY 11021 or call 1-800-347-4600.

A National Institute on Aging grantee, David P. Colvin, M.D., has developed FALL-SAFE™, a device that allows elderly, frail and rehabilitation patients to exercise under protection. The system

News of what is new in the medical supply industry is composed of abstracts from news releases. Each item published does not necessarily constitute an endorsement of a product or recommendation for its use by INDIANA MEDICINE or by the Indiana State Medical Association.

responds immediately to a fall and applies a safe braking force to catch and lower the user to the floor. FALL-SAFE™ is designed to be used primarily in nursing homes, hospitals and rehabilitation centers. Prototypes are being evaluated at the Hillhaven Convalescent Center in Chapel Hill, N.C., and the Rehabilitation Department at Duke University in Durham, N.C.

TAP Pharmaceuticals, a joint venture of Abbott Laboratories and Takeda Chemical Industries of Japan, has received approval from the U.S. Food and Drug Administration to market Lupron Depot, a new once-a-month formulation of its drug Lupron (leuprolide acetate). Lupron is used in the palliative treatment of advanced prostate cancer. Until now, patients receiving Lupron therapy needed to inject themselves daily. This new injection will be administered by a physician during an office visit.

GynoPharma, Inc. has introduced ParaGard™ (Intrauterine Copper Contraceptive) Model T 380A, the first copper IUD available to American women in more than two years. ParaGard™ is a plastic T-shaped device with copper on its arms and stem. It can remain in place for up to four years and has a pregnancy rate of less than one per 100 women. Appropriate candidates for the new IUD include women who want a long-term, reversible contraceptive method; who have had at least one child; who have no history of pelvic inflammatory disease and who are involved in a stable, mutually monogamous relationship. The new IUD will cost approximately \$140. □



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BRIEF SUMMARY

CONTRAINDICATIONS

There are no known contraindications to the use of sucralfate.

PRECAUTIONS

Duodenal ulcer is a chronic, recurrent disease. While short-term treatment with sucralfate can result in complete healing of the ulcer, a successful course of treatment with sucralfate should not be expected to alter the post-healing frequency or severity of duodenal ulceration.

Drug Interactions: Animal studies have shown that simultaneous administration of CARAFATE (sucralfate) with tetracycline, phenytoin, digoxin, or cimetidine will result in a statistically significant reduction in the bioavailability of these agents. The bioavailability of these agents may be restored simply by separating the administration of these agents from that of CARAFATE by two hours. This interaction appears to be nonsystemic in origin, presumably resulting from these agents being bound by CARAFATE in the gastrointestinal tract. The clinical significance of these animal studies is yet to be defined. However, because of the potential of CARAFATE to alter the absorption of some drugs from the gastrointestinal tract, the separate administration of CARAFATE from that of other agents should be considered when alterations in bioavailability are felt to be critical for concomitantly administered drugs.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Chronic oral toxicity studies of 24 months' duration were conducted in mice and rats at doses up to 1 gm/kg (12 times the human dose). There was no evidence of drug-related tumorigenicity. A reproduction study in rats at doses up to 38 times the human dose did not reveal any indication of fertility impairment. Mutagenicity studies were not conducted.

Pregnancy: Teratogenic effects. Pregnancy Category B. Teratogenicity studies have been performed in mice, rats, and rabbits at doses up to 50 times the human dose and have revealed no evidence of harm to the fetus due to sucralfate. There are, however, no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed.

Nursing Mothers: It is not known whether this drug is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when sucralfate is administered to a nursing woman.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Adverse reactions to sucralfate in clinical trials were minor and only rarely led to discontinuation of the drug. In studies involving over 2,500 patients treated with sucralfate, adverse effects were reported in 121 (4.7%).

Constipation was the most frequent complaint (2.2%). Other adverse effects, reported in no more than one of every 350 patients, were diarrhea, nausea, gastric discomfort, indigestion, dry mouth, rash, pruritus, back pain, dizziness, sleepiness, and vertigo.

OVERDOSAGE

There is no experience in humans with overdosage. Acute oral toxicity studies in animals, however, using doses up to 12 gm/kg body weight, could not find a lethal dose. Risks associated with overdosage should, therefore, be minimal.

DOSAGE AND ADMINISTRATION

The recommended adult oral dosage for duodenal ulcer is 1 gm four times a day on an empty stomach.

Antacids may be prescribed as needed for relief of pain but should not be taken within one-half hour before or after sucralfate.

While healing with sucralfate may occur during the first week or two, treatment should be continued for 4 to 8 weeks unless healing has been demonstrated by x-ray or endoscopic examination.

HOW SUPPLIED

CARAFATE (sucralfate) 1-gm tablets are supplied in bottles of 100 (NDC 0088-1712-47) and in Unit Dose Identification Paks of 100 (NDC 0088-1712-49). Light pink scored oblong tablets are embossed with CARAFATE on one side and 1712 bracketed by C's on the other. Issued 1/87

Reference:

1. Eliakim R, Ophir M, Rachmilewitz D. *J Clin Gastroenterol* 1987;9(4):395-399.

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Action: Yohimbine blocks presynaptic alpha-2 adrenergic receptors. Its action on peripheral blood vessels resembles that of reserpine, though it is weaker and of short duration. Yohimbine's peripheral autonomic nervous system effect is to increase parasympathetic (cholinergic) and decrease sympathetic (adrenergic) activity. It is to be noted that in male sexual performance, erection is related to cholinergic activity and to alpha-2 adrenergic blockade which may theoretically result in increased penile inflow, decreased penile outflow or both.

Yohimbine exerts a stimulating action on the mood and may increase anxiety. Such actions have not been adequately studied or related to dosage although they appear to require high doses of the drug. Yohimbine has a mild anti-diuretic action, probably via stimulation of hypothalamic centers and release of posterior pituitary hormone.

Reportedly, Yohimbine exerts no significant influence on cardiac stimulation and other effects mediated by B-adrenergic receptors, its effect on blood pressure, if any, would be to lower it; however no adequate studies are at hand to quantitate this effect in terms of Yohimbine dosage.

Indications: Yocon[®] is indicated as a sympatholytic and mydriatic. It may have activity as an aphrodisiac.

Contraindications: Renal diseases, and patient's sensitive to the drug. In view of the limited and inadequate information at hand, no precise tabulation can be offered of additional contraindications.

Warning: Generally, this drug is not proposed for use in females and certainly must not be used during pregnancy. Neither is this drug proposed for use in pediatric, geriatric or cardio-renal patients with gastric or duodenal ulcer history. Nor should it be used in conjunction with mood-modifying drugs such as antidepressants, or in psychiatric patients in general.

Adverse Reactions: Yohimbine readily penetrates the (CNS) and produces a complex pattern of responses in lower doses than required to produce peripheral a-adrenergic blockade. These include, anti-diuresis, a general picture of central excitation including elevation of blood pressure and heart rate, increased motor activity, irritability and tremor. Sweating, nausea and vomiting are common after parenteral administration of the drug.^{1,2} Also dizziness, headache, skin flushing reported when used orally.^{1,3}

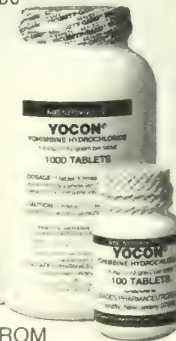
Dosage and Administration: Experimental dosage reported in treatment of erectile impotence.^{1,3,4} 1 tablet (5.4 mg) 3 times a day, to adult males taken orally. Occasional side effects reported with this dosage are nausea, dizziness or nervousness. In the event of side effects dosage to be reduced to 1/2 tablet 3 times a day, followed by gradual increases to 1 tablet 3 times a day. Reported therapy not more than 10 weeks.³

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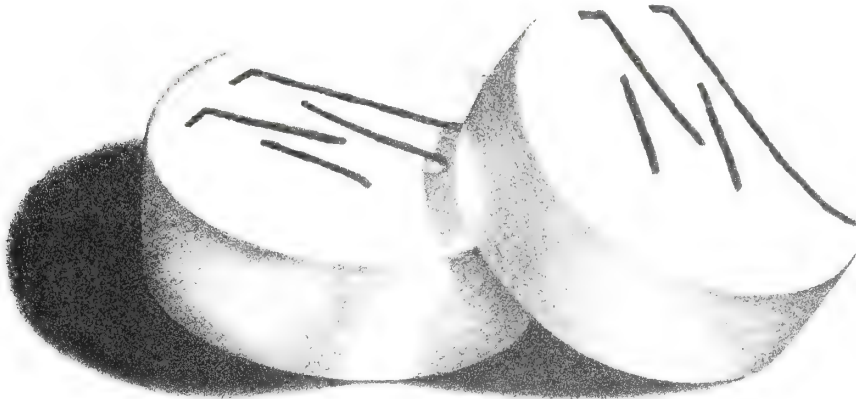
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■ cme calendar

St. Vincent Hospital

The following continuing medical education program is scheduled at St. Vincent Hospital in Indianapolis for May.

May 26 – Annual "500" Orthopedic meeting, St. Vincent Cooling Auditorium.

For more information, contact Marilyn Soltermann, CME coordinator, St. Vincent Hospital, 2001 W. 86th St., P.O. Box 40970, Indianapolis, IN 46240-0970.

Methodist Hospital

Methodist Hospital will sponsor the following continuing medical education events for May:

May 18-19– 24th Annual Batman Lecture, Methodist Hospital, Auditorium, Indianapolis.

May 24 – Initial Management of Catastrophic Athletic Injuries, Methodist Hospital, Auditorium, Indianapolis.

For more information, call Dixie Estridge, CME Coordinator, Methodist Hospital of Indiana, at (317) 929-3733.

Indiana University

The Indiana University School of Medicine will sponsor the following CME courses for May, June, July and August:

May 17-18– 24th Annual Indiana Multidisciplinary Child Care Conference, Hilton-on-the-Circle, Indianapolis.

May 19-20– Windows to the Future: Tumor and Transplantation Biology, University Place Executive Conference Center and Hotel, Indianapolis.

June 8-10 – D/ART - Depression/Awareness,

Recognition, Treatment, Hilton-on-the-Circle, Indianapolis.

June 9 – Symposium on Cardiac Arrhythmias, University Place Executive Conference Center and Hotel, Indianapolis.

June 9 – Indiana Residents and Alumni Day, University Place Executive Conference Center and Hotel, Indianapolis.

June 10 – American Diabetes Association Indiana Affiliate Scientific Session, Embassy Suites, Indianapolis.

July 10-19 – 74th Annual Anatomy and Histopathology of the Head and Neck and Temporal Bone, University Place Executive Conference Center and Hotel, Indianapolis.

Aug. 11-12– Surgical Oncology Meeting, University Place Executive Conference Center and Hotel, Indianapolis.

For information, call Melody Dian, assistant director, Continuing Medical Education, (317) 274-8353.

NIH sponsors workshops

"Protection from Research Risk: Whom are We Protecting?" is the theme of a regional workshop sponsored by the National Institutes of Health - Office for Protection from Research Risks, the U.S. Food and Drug Administration and Indiana University-Purdue University at Indianapolis.

The workshop will be June 1 and 2 at the University Place Executive Conference Center and

Hotel on the IUPUI campus. People who are concerned with the conduct of research involving human subjects, including investigators, administrators, research subjects and students, are encouraged to attend the workshop.

For registration information, call Harriet Rodenberg at (317) 274-4364.

University of Michigan

The Department of Family Practice of the University of Michigan Medical School will conduct the Silver Anniversary of the "Northern Michigan Summer Conference: An Update on Common Clinical Concerns."

The conference will be June 19 through 23 at Shanty Creek-Schuss Mountain in Bellaire, Mich. The course fee is \$395 and the one-day fee is \$100. To enroll, contact Pattie Goble, Registrar, Office of CME, Towsley Center, Box 0201, University of Michigan Medical School, Ann Arbor, MI 48109-0201, or call 1-800-962-3555.

Scott and White courses

The Scott and White Clinic, an association of the Scott and White Memorial Hospital and the Scott, Sherwood and Brindley Foundation, and Texas A&M University College of Medicine will sponsor two courses in June and July.

"Issues in Care: The Young Patient - Birth to 25" will be presented June 14 through 16 in South Padre Island, Texas. "Highlights in Women's Health Care," a course worth 16 hours of CME credit, will be June 28 through July 1 in Sante Fe, N.M. The fee for each course is \$350.

To register or obtain further information, contact Sharon Stermer, Office of CME, Scott and White, 2401 S. 31st St., Temple, Texas 76508 - (817) 774-4073. □

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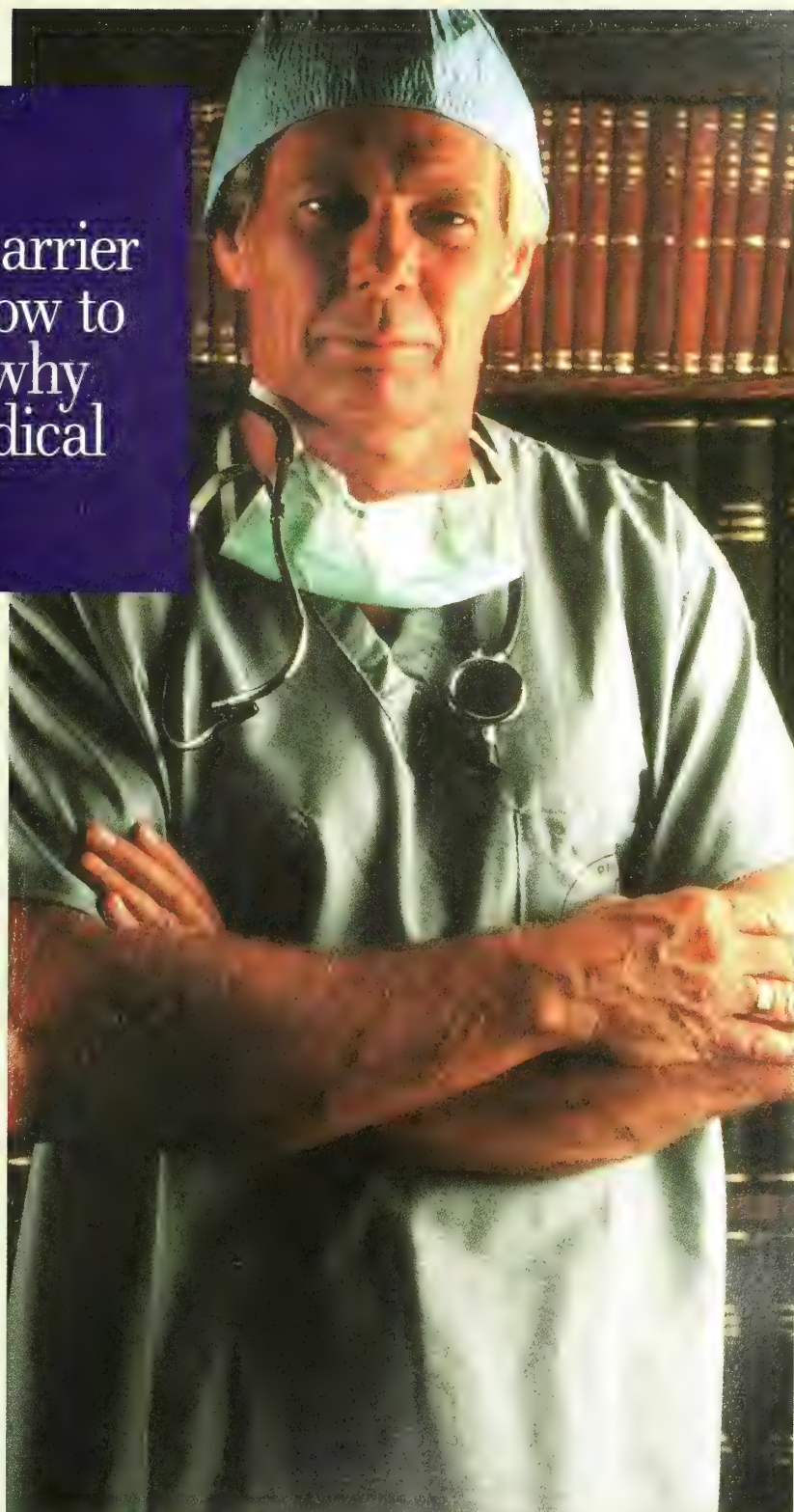
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Neonatal extracorporeal membrane oxygenation



William A. Engle, M.D.
Elizabeth A. Peters, M.D.
Karen W. West, M.D.
Indianapolis

Neonatal extracorporeal membrane oxygenation (ECMO) is an investigational form of cardiopulmonary support that is increasingly being used to treat near-term and term neonates with severe respiratory failure complicated by persistent pulmonary hypertension.^{1,2} In this article, we review the history, procedure, patient selection criteria, complications and results of extracorporeal support in neonates.

History

The first neonatal experience with ECMO occurred in 1965 when Rashkind and colleagues treated four preterm infants dying from hyaline membrane disease.³ Mechanical ventilation in neonatal patients generally was not available at this time; Rashkind and colleagues were attempting to develop an "artificial placenta" to provide cardiopulmonary support and improve survival, although without success.

Between 1969 and 1975, several other investigators attempted to treat preterm infants with ECMO, again without success as all treated infants died, many with intracranial hemorrhages.^{4,6} Because of this negative experience with ECMO in preterm infants

and the advent of mechanical ventilators for neonates, investigators began focusing their attention on a different population of infants who might benefit from ECMO: The term infant with respiratory failure unresponsive to conventional mechanical ventilation and supportive therapy.

In 1975, Bartlett and coworkers reported the first neonatal survivor with ECMO.⁷ In the following 15 years, there has been an exponential rise in interest in this form of cardiopulmonary support with a virtual explosion in the number of medical centers providing neonatal ECMO. In 1985, nine centers provided this treatment internationally; in January 1989, 49 centers throughout the world were offering ECMO to neonatal patients.

Procedure

ECMO may be accomplished by two methods of vascular access: Venoarterial and venovenous bypass. Venoarterial bypass has the potential to provide total support of cardiac and lung function and is currently the method of choice in neonatal patients. Venovenous bypass has been used experimentally in neonatal patients and provides adequate support for those neonates with compromised pulmonary function and adequate cardiac function. However, venovenous bypass is technically more difficult to perform than venoarterial bypass and does not

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provide cardiac support.^{1,8} In this article, we will limit our discussion to venoarterial bypass in neonates.

The first step in the ECMO procedure is preparation of the extracorporeal circuit (*Figure 1*). The circuit is comprised of blood-filled tubing with a servo-regulating reservoir, pump, membrane oxygenator and heat exchanger. While the circuit is being assembled and primed with heparinized blood, access to the infant's vascular system is obtained through surgical placement of catheters into the right internal jugular vein and right common carotid artery. The catheter in the right internal jugular vein is threaded into the right atrium and functions to divert blood by gravity drainage into the extracorporeal circuit. The arterial catheter is advanced to the entrance of the aortic arch and serves to return oxygenated blood to the infant's systemic circulation.

Deoxygenated venous blood drains from the right atrium into a servo-regulating reservoir (*Figure 1*). The volume of blood within this reservoir controls a switch, which, in turn, controls the operation of the roller pump. If the volume of blood within the reservoir decreases, the switch is turned off and the pump stops. This safety feature prevents the pump from inadvertently pulling air into the circuit, which would occur in the absence of blood within the extracorporeal tubing.

The deoxygenated blood then is pumped through a membrane oxygenator where gas exchange occurs. The membrane oxygenator is a very thin silicone sheet, which is rolled up lengthwise; this allows blood on one side of the membrane and gas on the other side of the membrane to pass in a

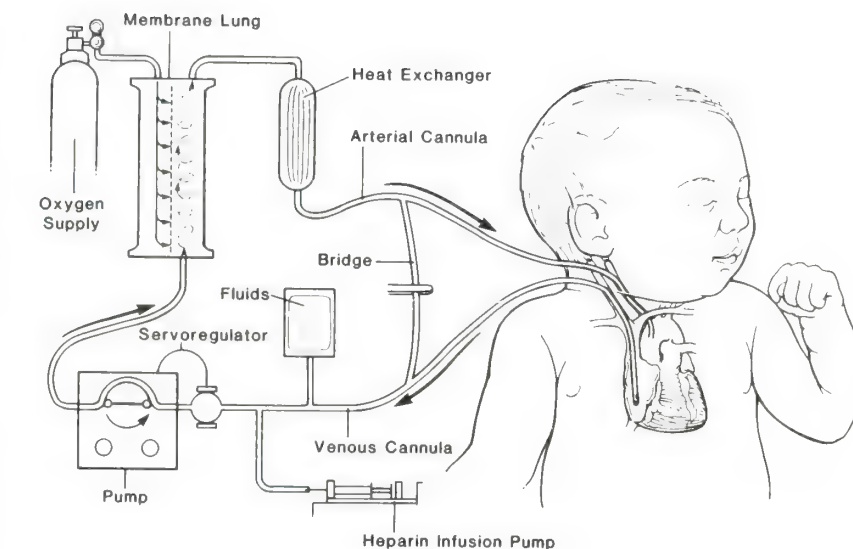


Figure 1: The circuit used during ECMO.

countercurrent fashion. The large surface area of this membrane allows exchange of oxygen and carbon dioxide without significant trauma to blood cells. Heparin is infused into the circuit to maintain circuit patency and minimize thromboembolus formation. After the blood is oxygenated, carbon dioxide removed and heparin added, it is rewarmed by circulating through a heat exchanger. The oxygen-rich blood then is reinfused into the neonate's systemic circulation by way of the right carotid artery catheter.

Once ECMO is initiated, the amount of extracorporeal blood flow gradually is increased until approximately 80% to 100% of the infant's cardiac output flows through the extracorporeal circuit (i.e., 80-120 mL/kg/min). After the infant is stabilized, the ventilator pressures and rate and inspired oxygen concentration are reduced significantly. ECMO then provides cardiopulmonary support while the lungs and heart recover, thereby minimizing the

risks associated with barotrauma and oxygen toxicity (i.e., bronchopulmonary dysplasia).

When ECMO is initiated, vasoactive agents such as dopamine, dobutamine, isoproterenol and tolazoline generally are discontinued. The extracorporeal flow is titrated so the infant's arterial PO_2 is maintained between 50 and 80 torr, and the venous oxygen saturation is greater than 70%. Platelets may be destroyed as they circulate through the extracorporeal circuit and usually require periodic replacement to maintain the platelet count greater than 50,000. The hematocrit is typically maintained between 40 and 45 with packed red blood cell infusions. The heparin dosage is titrated to achieve an activated clotting time between 220 and 270 seconds. Intravenous fluids and all medications including ampicillin and gentamicin are infused directly into the extracorporeal circuit. Chest radiographs, head ultrasounds and blood cultures are performed daily while the patient

Table 1

Disease entities
amenable to
treatment with ECMO

- Persistent pulmonary hypertension of the newborn
- Meconium aspiration syndrome
- Respiratory distress syndrome
- Sepsis
- Congenital diaphragmatic hernia

is on ECMO to monitor for atelectasis, intracranial hemorrhage and bacterial infection, respectively.

Extracorporeal flow gradually is reduced as the infant's cardiac and lung functions recover, as evidenced by improving blood gases and venous saturation. When the extracorporeal flow is reduced to 60 mL/min from the original 360 to 400 mL/min, the patient is idled on minimal bypass support for two to eight hours to ensure stable pulmonary and heart function and resolution of the pulmonary hypertension. The cannulas in the right internal jugular vein and right common carotid artery are then removed and ECMO is discontinued. The infant is continued on mechanical ventilation and generally weaned from oxygen and mechanical ventilatory support over the next several days.

The duration of ECMO averages about five days. If the infant has not improved after seven to 14 days of ECMO or in the event of uncontrolled bleeding, intracranial

hemorrhage or lethal organ failure, extracorporeal support is discontinued, and routine conventional therapies are resumed.

Patient selection

Candidates for ECMO are near-term and term infants with reversible lung disease complicated by persistent pulmonary hypertension (Table 1). Typically, these patients have either primary persistent pulmonary hypertension of the newborn or persistent pulmonary hypertension secondary to meconium aspiration syndrome, respiratory distress syndrome, congenital diaphragmatic hernia or sepsis, and are unresponsive to maximal conventional medical and surgical management.^{1,2} If

the patients are ≥ 35 weeks gestational age, ≥ 2 kg birth weight and have received less than seven to 10 days of conventional therapy, they may be candidates for ECMO therapy (Table 2).

Less than seven to 10 days of conventional therapy is an eligibility requirement because extraordinary levels of mechanical ventilation and 100% oxygen superimposed on underlying pulmonary disease will cause parenchymal injury (i.e., bronchopulmonary dysplasia), which is not amenable to extracorporeal support; it is the vasospastic persistent pulmonary hypertension component of the newborn's cardiorespiratory distress that is amenable to ECMO. To be eligible for ECMO, patients

Table 2

Criteria for ECMO

Inclusion criteria:

- Respiratory failure unresponsive to maximal conventional therapies
- Greater than or equal to 35 weeks gestational age
- Greater than or equal to 2 kg birth weight
- Less than seven to 10 days of conventionally treated respiratory failure
- Normal estimates of neurologic function and cardiac structure

Respiratory failure criteria:

Category	Criteria
Unresponsiveness	any two of three for > three hours: $\text{PaO}_2 < 55$, $\text{pH} < 7.4$, hypotension
Acute deterioration	$\text{PaO}_2 < 40$ and $\text{pH} < 7.15$ for > two hours
$\text{AaDO}_2 \geq 630$ for four hours	$\text{AaDO}_2 = \text{FiO}_2 (713) - \text{PaO}_2 - \frac{\text{PaCO}_2}{0.8}$
$\text{OI} \geq 35$ for six hours	$\text{OI} = \frac{\text{MAP} \times \text{FiO}_2 \times 100}{\text{PaO}_2}$
$\text{OI} \geq 40$ for four hours	$\text{OI} = \frac{\text{MAP} \times \text{FiO}_2 \times 100}{\text{PaO}_2}$

Exclusion criteria:

- Greater than seven to 10 days of conventionally treated respiratory failure
- Intracranial hemorrhage
- Bleeding diathesis
- Congenital heart disease
- Condition incompatible with a normal quality of life

also must have normal estimates of both neurologic function and cardiac structure. A normal head ultrasound and normal echocardiogram in the absence of the clinical findings of severe perinatal asphyxia (i.e., coma) are used to determine eligibility.

Criteria for respiratory failure that predict a high mortality for near-term and term infants have been determined. A high risk of dying before becoming eligible for extracorporeal membrane oxygenation has been chosen because of risks associated with long-term cardiopulmonary bypass in neonates. These risks include intracranial hemorrhage, uncontrolled bleeding associated with systemic heparinization and mechanical malfunctions.

Several criteria have been identified at the James Whitcomb Riley Hospital for Children, which will select a population of near-term and term infants with an extremely high risk of dying in spite of maximal conventional support (Table 2). Patients categorized as "unresponsive" to medical management experience any two of the following three factors for > three hours: $\text{PaO}_2 < 55$, $\text{pH} < 7.4$ and/or hypotension. Patients categorized as "acute deterioration" have a $\text{PaO}_2 < 40$ and $\text{pH} < 7.15$ for > two hours. "Unresponsiveness" and "acute deterioration" are associated with a mortality rate greater than 74%. Other estimates of the severity of respiratory failure are based on the alveolar-arterial oxygen difference (AaDO_2) or the oxygenation index (OI) calculated over time. Neonates with an alveolar to arterial oxygen difference ≥ 630 for four hours, oxygenation index ≥ 35 for six hours or an oxygenation index ≥ 40 for four hours have

mortalities between 81% and 83%.

Only those infants with persistent pulmonary hypertension and lung disease thought to be reversible are considered for ECMO. As previously discussed, infants are excluded from consideration if they experience more than 10 days of conventionally treated respiratory failure or have evidence of an intracranial hemorrhage, an ongoing bleeding diathesis (e.g., disseminated intravascular coagulation, hemophilia, etc.), congenital heart disease, certain chromosomal abnormalities or irreversible major organ failure.

Once the infant has met criteria for ECMO and is considered to have failed conventional therapy, informed consent is obtained from the family and the neonate is placed on extracorporeal support. About three hours elapse between the time when a neonate meets criteria and initiation of ECMO. This is important when considering referral for this treatment because the time between reaching criteria for respiratory failure and death averages less than 10 hours for all categories except the $\text{AaDO}_2 \geq 630$ criteria (duration until death averages 18 hours).

Complications

Prolonged cardiopulmonary bypass has a moderate amount of inherent risk (Table 3). Ligation of both the right internal jugular vein and the right common carotid artery is performed during placement of the cannulas into these vessels. Although some investigators are studying the possibility of reconstructing these vessels after ECMO treatment, the risk of distal embolization is high and, therefore, surgical repair is not recommended.^{1,2} There is

Table 3

Complications associated with ECMO

- Bleeding (intracranial, surgical site, etc.)
- Diminished right hemispheric oxygen delivery
- Thromboembolic phenomena
- Infection
- Seizures
- Hypertension
- Hemolysis
- Hypokalemia
- Mechanical malfunctions

concern about adequacy of blood flow and oxygen delivery to the right side of the brain after ligation of these vessels, although collateral blood flow through the vertebral arteries and left carotid artery by way of the Circle of Willis is generally adequate. In a dying patient, the relatively small risk of altered right hemispheric perfusion is usually accepted.

The other major concern during neonatal ECMO is the need for anticoagulation to decrease clotting within the circuit and minimize the risk for thromboembolic phenomenon. Systemic heparinization, however, increases the risk of bleeding; this is especially a concern for those patients who are septic, have had a recent surgical procedure, (i.e., repair of a congenital diaphragmatic hernia), or are somewhat premature (i.e., 35 to 37 weeks gestation). Because of the potential risk of complications from bleeding, embolic phenomenon, infection and mechanical failure with longer durations of

Table 4

Neonatal ECMO: James Whitcomb Riley Hospital for Children

June 1987 through March 1989

Total number	37
Number of survivors (%)	30 (81)
Major complications	
– intracranial hemorrhage	3
– surgical site bleeding	1
– other bleeding	1
– bronchopulmonary dysplasia	2
Average duration of ECMO	111 hours (40 to 289 hours)
Average duration of hospitalization	30 days (8 to 160 days)

cardiopulmonary bypass, most patients are treated with ECMO for no more than 14 days and usually not longer than 10 days. If a neonate has not recovered after seven to 10 days of extracorporeal support, he/she is considered to have a significant degree of irreversible lung injury that ECMO will not help.

Several other problems occasionally arise during neonatal extracorporeal support. Seizures, hypertension, hypokalemia, infection, hemolysis and mechanical malfunctions are the most common difficulties encountered. A problem unique to cardiopulmonary bypass, which appears to occur in all neonates, is diffuse atelectasis and/or pulmonary edema following initiation of ECMO. This is characterized by loss of breath sounds, decreased compliance and "whiteout" on chest radiographs. As the chest x-ray clears and compliance subsequently improves, extracorporeal support can usually be reduced. The presence of breath sounds

and clearing of chest radiographs are clinical indicators that pulmonary hypertension and the underlying lung disease are resolving.

Outcomes

Numerous investigators have reported survival rates between 51% and 86% with ECMO.^{1,2,9-11} The national ECMO registry reports an overall survival rate of 82.6% with 2,212 patients having received ECMO treatments as of Jan. 1, 1989. Riley Hospital has been offering ECMO to treat newborn infants with severe respiratory failure since June 1987. Of 37 patients, 30 have survived (Table 4).

Major complications among survivors include three with intracranial hemorrhage, one with significant surgical site bleeding and two with chronic lung disease. Neurodevelopmental outcome following neonatal ECMO has been reported in a number of studies and is encouraging.^{1,2,9-11} Despite the critical underlying condition of these patients before

ECMO and the moderate risk that accompanies this treatment, approximately 70% of the patients are considered to be normal at followup. Approximately 15% have significant neurodevelopmental handicaps, while the remaining 15% of patients have mild to moderate handicaps. The short-term outcomes for neonates receiving extracorporeal support at Riley Hospital is consistent with these national outcomes.

For comparison, before ECMO became available, 80% of neonates with severe persistent pulmonary hypertension died. The neurodevelopmental outcome was normal in 40% to 80% of survivors.¹²⁻¹⁵ Therefore, it appears that neonatal extracorporeal support improves survival without an increase in morbidity in neonates with severe persistent pulmonary hypertension.

Conclusion

ECMO may be used as a rescue therapy for neonates with severe reversible lung disease complicated by persistent pulmonary hypertension of the newborn. There are significant risks associated with its use and potential long-term sequelae. However, neonatal extracorporeal support does increase the chance for survival in those infants with a high risk for mortality who are failing conventional therapy. This new treatment modality also may reduce the risk for chronic lung disease and neurodevelopmental morbidity. □

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■ drug names

Look-alike and sound-alike drug names

	ZESTRIL	ZOSTRIX
Category:	Antihypertensive	Neuralgia
Brand name:	Zestril, Stuart	Zostrix, GenDerm
Generic name:	Lisinopril	Capsaicin
Dosage forms:	Tablets	Cream
	EUTHROID	EUTRON
Category:	Thyroid drug	Antihypertensive
Brand name:	Euthroid, Parke-Davis	Eutron, Abbott
Generic name:	Liotrix	(Methylclothiazide-pargyline)
Dosage forms:	Tablets	Tablets

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■ cme quiz

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Neonatal extracorporeal membrane oxygenation

1. Which of the following diseases are amenable to ECMO?
 - a. Persistent pulmonary hypertension
 - b. Congenital diaphragmatic hernia
 - c. Hyaline membrane disease
 - d. Sepsis
 - e. All of the above
2. Which of the following factors is common to meconium aspiration syndrome, neonatal sepsis, congenital diaphragmatic hernia and respiratory distress syndrome and is most amenable to treatment with ECMO? Choose one.
 - a. Primary surfactant deficiency
 - b. Pulmonary hypoplasia
 - c. Pneumonitis
 - d. Persistent pulmonary hypertension
3. Barotrauma and oxygen toxicity are minimized during neonatal ECMO.
 - a. True
 - b. False
4. Which of the following is an inclusion criterion for neonatal ECMO?
 - a. Birth weight less than 2 kilograms
 - b. Respiratory failure unresponsive to maximal medical management
 - c. Bleeding diathesis
 - d. Gestational age less than 35 weeks
5. Which of the following are exclusion criteria for neonatal ECMO? (May choose more than one).
 - a. Birth weight less than 2 kilograms
 - b. Intracranial hemorrhage
 - c. Congenital heart disease
 - d. Gestational age greater than or equal to 35 weeks
 - e. Bleeding diathesis
6. The membrane oxygenator provides which functions?
 - a. Hemodialysis
 - b. Oxygen exchange
 - c. Heparin
 - d. Carbon dioxide exchange
 - e. a and c
 - f. b and d
7. What are the major risks associated with neonatal ECMO?
 - a. Bleeding
 - b. Ligation of carotid artery
 - c. Ligation of jugular vein
 - d. All of the above
8. Management problems which are frequently encountered during neonatal ECMO include (may choose more than one).
 - a. Hypertension
 - b. Hyperkalemia
 - c. Hypokalemia
 - d. Seizures
 - e. Infection
9. Of 100 neonates treated with ECMO, how many are expected to survive?
 - a. 50 and 60
 - b. 60 and 70
 - c. 70 and 80
 - d. 80 and 90
 - e. 90 and 100
10. The neurodevelopmental outcome is normal in the majority of neonates treated with ECMO.
 - a. True
 - b. False

Answer sheet for CME quiz

I wish to apply for one hour of Category I AMA Continuing Medical Education credit through the I.U. School of Medicine. I have read the article and answered the quiz on this answer sheet. I understand my answer sheet will be graded confidentially, at no cost to me, and notification of my successful completion of the quiz (80% of the questions answered correctly) will be directed to me for my application for the Physician Recognition Award of the American Medical Association. I also understand that if I do not answer 80% of the questions correctly, I will not be advised of my score, but the answers will be published in the next issue of INDIANA MEDICINE.

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Address _____

Identification number (found above your name on mailing label) _____ Signature _____

To be eligible for this month's quiz, send your completed, signed application before June 10, 1989, to the address appearing at the top of this page.

Answers (circle one)

1. a b c d e
2. a b c d
3. a b
4. a b c d
5. a b c d e
6. a b c d e f
7. a b c d
8. a b c d e
9. a b c d e
10. a b



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Percutaneous coronary atherectomy: A preliminary report

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William K. Nasser, M.D.
Diane Center, M.N.
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Coronary artery atherosclerotic obstructive disease is the largest cause of death and disability in our country. Present treatments include medication as well as surgical and nonsurgical (percutaneous transluminal coronary angioplasty [PTCA]) myocardial revascularization.

Recently, percutaneous coronary atherectomy (PCA) has been proposed as a means of enlarging the area of luminal compromise by excising a portion of the atherosclerotic plaque.¹ Atherectomy has been investigated in peripheral arteries and has been proven safe and effective for selected stenoses. Most exciting is a possible reduction in restenosis rate.²

In this paper, we wish to present the method and preliminary results of PCA in our institution.

Procedure

Our experience with PCA at St. Vincent Hospital and Health Care Center has been with the Simpson Coronary AtheroCathTM (Devices

for Vascular Intervention, Inc., Redwood City, Calif.). This 110 cm atherectomy catheter is equipped with a cutter blade enclosed in a cylindrical housing with an opening along one side.

A balloon is located opposite the opening in the housing and is used to hold the cutter in the desired position in the coronary artery. The atherectomy catheter has one lumen for inflation of the balloon and another lumen for a cable, which activates the cutter and allows the rotating cutting blade to slide along the opening in the cylinder, cutting and entrapping the plaque that intruded therein after balloon inflation.

Before this procedure, heart catheterization films are reviewed to determine if coronary atherectomy may be indicated. Lesions

for coronary artery atherectomy must be selected carefully. Since the housing is rigid, the atherectomy catheter may not negotiate sharp vessel angulations. After informed consent, the patient is taken to the cardiac catheterization suite. Local anesthesia with lidocaine hydrochloride and mild sedation with a benzodiazepine preparation is given intravenously to ensure patient comfort. Routine percutaneous entry into the femoral artery is performed and an 11 French sheath is then inserted using the Seldinger technique.

Ten thousand units of heparin sodium are then administered intra-arterially. An 8 French sheath is placed in the femoral vein and nitroglycerin 16 mg in 250 cc 5% dextrose water (D₅W) is

Table

Results of percutaneous coronary atherectomy
Total stenoses treated = 38

Lesion location	Number attempted	Number successful
Left anterior descending	16	14
Left circumflex	5	5
Right coronary artery	6	6
Saphenous vein graphs	11	10
Total	38	35

Success rate = 94.7%

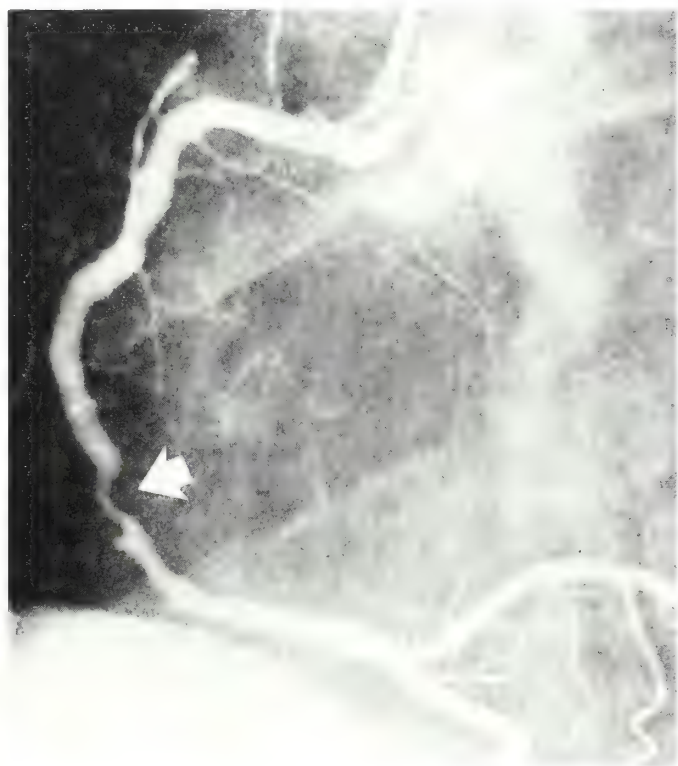


Figure 1A: Pre-angioplasty projection of the left coronary artery.



Figure 1B: Atherectomy cutting catheterization at work.

started at 10 to 20 mcg per minute. An 8 French coronary artery guiding catheter is used to confirm the stenosis identified at prior catheterization. The atherectomy catheter is then introduced and advanced across the lesion with fluoroscopic guidance. The balloon is inflated to secure placement of the catheter. Following this maneuver, the motor drive for the cutting device is activated while the cutter is slowly advanced into the housing trapping atheromatous plaque.

When the cutter is fully advanced, the balloon is deflated. If more cuts are necessary to correct the stenosis, the atherectomy catheter is repositioned and the balloon is reinflated to repeat the

procedure. As many as five cuts per lesion can be made before the catheter should be removed for cleaning. If necessary, the atherectomy catheter can be reinserted after the atheromatous plaque is removed from the housing and the procedure repeated until optimized blood flow through the vessel has been established. (Figures 1A, 1B and 1C).

Manual flushing of the artery is performed periodically with a solution of 1,000 units heparin sodium in 500 cc D₅W. If the coronary artery is severely stenosed, PTCA may be performed on the lesion before the atherectomy catheter housing across the lesion. The electrocardiogram,

blood pressure and oxygen saturation are monitored continuously as is the patient for chest pain. Like PTCA, PCA can decrease coronary blood flow when the atherectomy catheter is in place across the stenosis.

After the procedure, the atherectomy catheter and guiding catheters are removed with the sheaths left in place. Atheromatous plaque is sent for histopathologic evaluation. Nitroglycerin continues to infuse into the venous sheath while a continuous heparin sodium flush system maintains the patency of the arterial sheath. Sheaths are removed the morning after the procedure and the sites are closely watched for hematoma and bleeding. Discharge from the

hospital can be as early as the afternoon of the day following the PCA.

Results

The first PCA at our center was performed in June 1988. As of November 1988, we have performed 35 procedures on 27 men (77%) and eight women (23%). Ages range from 36 to 76 with a mean age of 58. Six patients (17%) were older than 70, eight patients (23%) had left ventricular dysfunction and 11 (31%) had prior coronary artery bypass.

The Table shows the results of PCA in our 35 patients who had 38 stenoses treated with PCA. Three patients had multilesions including two with lesions of the proximal and mid-left anterior descending artery and a third with lesions of a saphenous vein graft.

One patient had reclosure after PCA due to thrombus formation and underwent emergency coronary artery bypass. The 34 remaining patients have been followed \pm 4 months, and three (9%) have clinical evidence of restenosis.

Discussion

Transluminal atherectomy was first performed at Sequoia Hospital, Redwood City, Calif. In 1985, Simpson and associates³ performed transluminal atherectomy on 70 cadaver arteries. Atherosclerotic plaque was removed in 268 (67%) of 410 attempts in 70 vessels. Histologic analysis combined with angiography revealed multiple passes significantly improved lumen size, created no major intimal flaps or dissections, liberated no embolic debris and

left smooth vessel margins. Only one vessel perforation was reported.

In a later investigation, Simpson and others⁴ performed transluminal atherectomy on 26 patients with stenoses of the common iliac, superficial femoral artery or popliteal artery. Mean percent stenosis was reduced from 79% to 22%. There were no vascular perforations, emboli, significant dissections or acute occlusions. Luminal borders were angiographically smoother after transluminal atherectomy compared to PTCA, a finding of possible significance as smooth vessel walls after atheroma removal are believed to reduce risk of recurrence.⁵

By 1988, investigators reported on transluminal atherectomy for 61 patients with occlusive peripheral vascular disease.⁶ Mean percent stenosis was reduced from 71% to 23%. Complications reported included one probable distal embolization without adverse effect, one thrombus formation resolved with streptokinase therapy and three lesions, which showed dissection with no impairment of blood flow. Simpson and associates further noted that patients with a residual stenosis rate below 30% had a lower restenosis rate than those patients with residual stenosis rates above 30%, concluding that a more complete atherectomy resulted in a lower restenosis rate. For a more detailed review of these studies see Bates, O'Neill and Topol's review on percutaneous atherectomy catheters.⁷

In 1986, investigators were expanded to include percutaneous coronary atherectomy with the first procedure being performed on cadaver coronary segments.⁸ By 1988, removal of atheromatous plaque was completed success-



Figure 1C: Post-PCA left coronary angiogram showing considerable improvement.

fully on two patients.⁹ In addition to PCA, one patient had PTCA that reduced a 95% mid right coronary artery stenosis to less than 20%. Another patient with a 5-year old saphenous vein graft had a PTCA leaving a 80% residual stenosis. Following PCA, the stenosis was significantly reduced to 20%.

Percutaneous coronary atherectomy, rotational atherectomy and laser ablation are new techniques for atheromatous plaque removal. Early data from multicenter trials¹⁰ suggest that PCA has an initial success rate and similar acute complication rate as PTCA. We are encouraged by our overall success rate of 94.7% for PCA.

Clearly, this procedure is both a useful and predictable therapy for focal coronary artery stenosis. The ultimate value of the procedure rests with its promisingly low restenosis rate compared to balloon angioplasty. □

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April CME quiz answers

The following letters are the answers to the CME quiz that appeared in the April 1989 issue: "A review of infections in day-care centers."

- | | |
|------|-------|
| 1. b | 6. a |
| 2. a | 7. c |
| 3. b | 8. b |
| 4. c | 9. a |
| 5. b | 10. c |

Percutaneous atherectomy of the popliteal artery

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Basil C. Genetos, M.D.
Marc E. Kaminsky, M.D.
Michael J. Mirro, M.D.
Fort Wayne, Ind.

Nonsurgical techniques to achieve peripheral arterial revascularization have evolved dramatically during the past two decades.¹⁻⁵

Initially, balloon catheter dilatation systems were used to successfully revascularize the peripheral vascular system. Recently, limitations in this technique have prompted the development of new methods to treat atherosclerotic peripheral vascular disease. Specifically, thermal disruption of atherosclerotic plaque by "hot tip laser" has been used successfully to treat vascular disease. A unique method of mechanic atherectomy also has been used to revascularize peripheral extremities successfully.¹⁸

The purpose of this report is to illustrate the use of the Simpson atherectomy catheter in a patient with an eccentric atherosclerotic popliteal arterial lesion. This case demonstrates the application of a new system in a patient with severe peripheral vascular disease.

Case report

Clinical history: A 61-year-old male diabetic had a neurotrophic ulcer of his right great toe. Erythema and ulceration without evidence of infection were noted

at the interphalangeal joint of the right great toe. Diminished femoral pulses were present bilaterally. No popliteal or dorsalis pedis or posterior tibial pulses were palpated in either lower extremity. A Doppler stethoscope revealed

audible pulsation in the pedal pulses bilaterally. The patient had a significant history of diffuse vascular disease and a history of insulin dependent diabetes mellitus since 1958. He had a myocardial infarction in 1975 and subse-



Figure 1: Angiogram of right popliteal artery before atherectomy (85% stenosis).



Figure 2: Angiogram of right popliteal artery after atherectomy (10% stenosis).

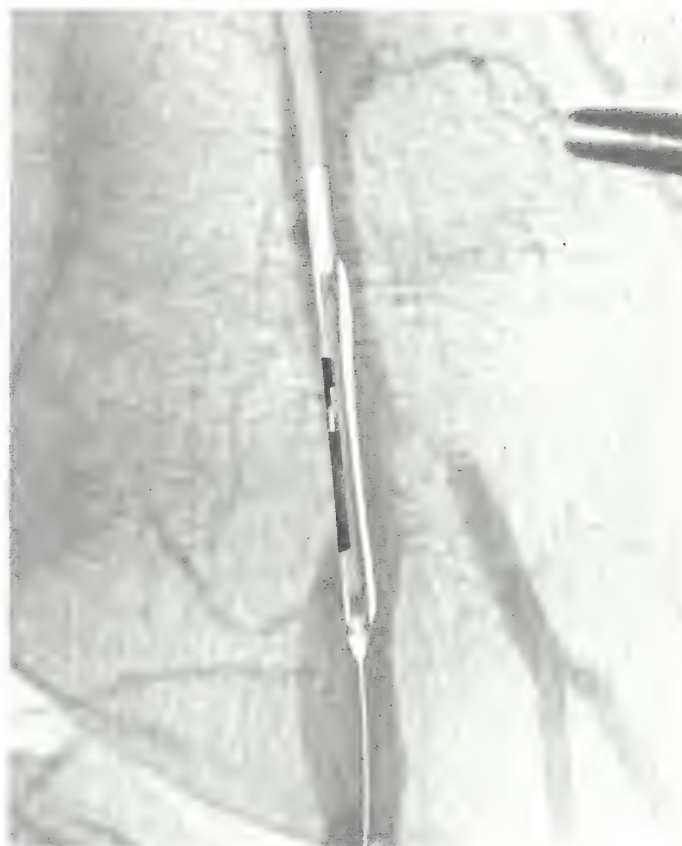


Figure 3: Simpson atherectomy catheter (superimposed on popliteal angiogram).

quent coronary bypass surgery in 1982. The patient is presently asymptomatic with the exception of his peripheral vascular disease.

Angiographic findings: Lower extremity angiography revealed stenotic lesions of the left common iliac and external iliac arteries. Both lesions were 50% occlusive. The right superficial femoral artery demonstrated minimal but diffuse atherosclerotic disease. A large eccentric plaque causing an 85% stenosis was noted at the right popliteal artery just above the knee (Figure 1). The right anterior tibial artery was not patent proximally but filled distally via collateral circulation. Atherectomy

was performed on the popliteal lesion.

Procedure: A right antegrade common femoral approach via an introducing sheath was used for Simpson atherectomy catheter placement. The eccentric lesion was crossed without difficulty. After proper alignment of the housing window, low pressure balloon inflation stabilized and sealed the housing against the plaque for each shaving. Deflation and rotation of the instrument occurred only after the cutter was fully advanced capping the collection chamber and its contents. A series of seven such shavings was performed to in-

clude the entire circumference of the lumen. The catheter was removed and the collection chamber emptied three times to prevent chamber over-filling and plaque embolization. Microscopic examination revealed fragmented portions of fibrotic atherosclerotic plaque tissue.

Results: Following completion of atherectomy, the angiographic analysis revealed 10% stenosis of the popliteal artery with excellent distal run-off (Figure 2).

Discussion

The present report demonstrates successful application of the Simpson peripheral atherectomy

catheter system for reduction of a popliteal arterial stenosis. Non-surgical peripheral revascularization was attempted first in 1964 by Dotter and Judkins using a Teflon coaxial catheter system.¹ Thrombotic and hemorrhagic complications due to the longitudinally directed force necessary for stenosis dilatation prompted Gruentzig to develop the balloon angioplasty catheter.²⁻⁴ The balloon catheter reduced the thrombotic and hemorrhagic complications by directing the force perpendicular to the vessel wall. The complication rate for the balloon system was notably less than the Dotter-Judkins system.

However, balloon angioplasty requires the splitting of the plaque material and often the subsequent tearing of the vascular intima and stretching of the media to obtain a satisfactory result.⁵⁻⁷ This disruption of the vessel wall and exposure of subendothelial microfibrils is believed to activate smooth muscle proliferation via platelet-derived growth factor and coagulation factors.⁸⁻¹¹ Subsequent development of fibromuscular plaque leads to the restenosis that remains the major limiting factor in angioplasty today.

Restenosis, failure and complication rates with the "remodeling" techniques of angioplasty are highest for eccentric or calcific lesions.¹²⁻¹⁵ Therefore, recent developments in angioplasty catheter design have focused on plaque destruction or removal rather than remodeling of these lesions. Thermal destruction of plaque material has been successful and may not create an environment favorable for restenosis.¹⁶ Another destructive technique, high speed rotational tip angioplasty, mechanically disintegrates the plaque into

particles that are not of sufficient size to precipitate embolic events.¹⁷ The removal approach, using a Simpson atherectomy catheter, is depicted in this case study.

The Simpson catheter consists of a fixed guide wire catheter with 70 cm shaft length and #7, #9 or #11 French diameter. Proximal to the 5 cm floppy fixed guide wire is a 4 cm rigid housing containing a rotating cutter transversing a 1.5 cm window. Diametrically opposed to this window is a 3 cm anchoring balloon that, when inflated, positions and stabilizes the window against the plaque (*Figure 3*).

Subsequent development of fibromuscular plaque leads to the restenosis that remains the major limiting factor in angioplasty today.

After positioning and stabilizing, the operator manually advances the rotating cutter within its window, excising a 15 mm long swath of plaque material that is deposited into the reservoir distal to the window. To lessen the chance of embolism, the catheter is withdrawn and the plaque is removed when the collection chamber is nearly full.

Advantages of this system are: 1) decreased vascular trauma; 2) increased success in calcific and eccentric lesions; 3) retrieval of excised plaque material for histologic examination; and 4) lower

restenosis rates when compared with balloon angioplasty.¹⁸

In summary, the development and applications of new devices for percutaneous atherectomy will substantially advance the ability to revascularize extremities in the patient with peripheral vascular disease. The present report highlights the fundamental principles of one of the first atherectomy catheter systems developed. □

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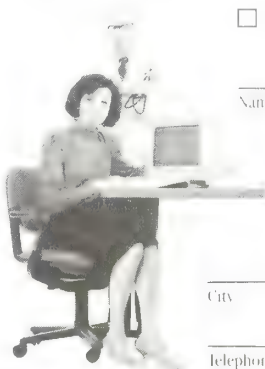
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A painless, slow-growing mass in a 31-year-old man

Catherine C. Moran, M.D.
Indianapolis

A 31-year-old man was examined for evaluation of a large, hard, non-tender mass of his left knee. He had noticed this painless mass gradually enlarge during the past 10 years. His pri-

mary complaint was easy bruising of the soft tissues surrounding the mass. Past medical history was significant for excision of a large, asymptomatic, bony mass of the left distal femur at the age of 13. There was no history of trauma.

Physical examination revealed a nontender, fixed, hard mass of the antero-medial aspect of the distal

left thigh that measured approximately 20 cm in diameter. There was a well-healed, antero-medial surgical scar of the distal left thigh. The left knee exam was normal. Neurovascular examination of the left lower extremity was normal. A radiograph was obtained.

What is your diagnosis?



Figure 1: Antero-posterior view of the left knee.



Figure 2: Lateral view of the left knee.

Discussion

The radiograph shows a solitary, sessile osteochondroma of the left femoral metaphysis. This is an osteocartilaginous exostosis characterized radiographically by continuity of the normal bone cortex and of the osteochondroma cortex. There also is continuity of the spongiosa of the exostosis and the normal bone.

A solitary osteochondroma is the most common benign bone tumor. It includes both a bony protuberance and a cartilaginous cap that may not be ossified. Osteochondromas usually occur in enchondral bones, especially in the metaphyses of long, tubular bones. They may represent either true neoplasia or developmental defects of physal growth. They most likely are congenital but usually do not appear until the second or third decade of life. Although multiple osteochondromatosis is known to be hereditary, there is no genetic predisposition for solitary osteochondromas.

The characteristic clinical manifestation is an asymptomatic, slow-growing mass. Symptoms may occur if the exostosis exerts pressure on contiguous nerves, vessels or bursae. Pain and rapid growth may indicate malignant degeneration. Enlargement after fusion of the nearest growth plate also suggests malignancy.

The most common locations are the distal metaphysis of the femur and the proximal metaphyses of the humerus, tibia and fibula. Thirty percent of cases are in the femur, 20% are in the humerus and 17% are in the tibia. The scapula, pelvis, clavicle, rib and vertebra are less common sites. Nonmetaphyseal lesions are rare. Intra-articular osteochondromas are uncommon, and they most likely are encountered in the hip

and the shoulder.

An osteochondroma of a tubular bone may be sessile, as in our patient, or pedunculated. In the sessile form, there is a broad base with a local widening of the shaft of the bone. In the pedunculated form, there is a narrow stalk with a bulbous osteocartilaginous cap. As the lesion grows, the pedunculated exostosis may become oriented longitudinally due to muscle pull, giving the appearance of a "coat hanger exostosis."

The radiologic hallmarks are cortical continuity and irregular ossification of the cartilaginous cap. Locally, there is lack of modeling of the tubular shaft. In an en face projection, there is a central radiolucency due to the greater mass of spongiosa and an apparent cortical defect at the pedicle base. Solitary osteochondromas of the pelvis and scapula may appear irregular and cauliflower-like. In flat bones, the attachment site may not be readily visualized.

Malignant transformation of a solitary osteochondroma to chondrosarcoma is rare, occurring in approximately 1% of cases. Clinical findings of transformation may include pain, edema, soft tissue mass and growth of the lesion after puberty. Radiographic findings include growth of a previously stable lesion, cortical erosion, irregular or scattered calcifications and development of a soft tissue mass.

Radiographically, osteochondromas are differentiated easily from other osseous protuberances such as osteophytes, heterotopic ossification and parosteal osteosarcoma. However, differentiation from a peripheral chondrosarcoma may be difficult. This is especially true if the chondrosarcoma is small and produces minimal ra-

diographic abnormalities or if the osteochondroma is large or in an atypical location. Other imaging techniques, including computed tomography and magnetic resonance imaging, may have diagnostic value in these cases. Computed tomography provides information on the type of matrix, the pattern of calcification, the thickness of the cartilaginous cap and the relationship to normal bone.

In classic solitary osteochondroma, management is conservative. Excision is the treatment of choice in symptomatic patients and in osteochondromas that are suspicious for malignancy. The overlying periosteum should be removed at operation to decrease the risk of recurrence. This patient was treated with excision, and a one-year followup showed no evidence of recurrence. □

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Acknowledgment: The author thanks Ethan M. Braunstein, M.D., for his editorial review.

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Adjuvant medications for cancer pain

Wayne O. Evans, Ph.D.
Indianapolis

Editors note: This is the fourth in a series of six articles on cancer pain.

The use of adjuvant medications should be the rule rather than the exception in the treatment of cancer pain. These medications are useful to reduce pain, potentiate narcotics, adjust sleep patterns and aid in the treatment of affective disorders that often accompany illness due to malignancy.

Furthermore, in some cases, these medications can help control undesirable side effects caused by the narcotic analgesics. Some are useful as antiemetic drugs. These drugs should not be considered narcotic replacements but as supplements.

As with all medications in cancer patients, the drug therapies must be individualized using the principle of upward titration. Start with the lowest reasonable dose of the drug and proceed upward until the desired effect is achieved. Corticosteroids are the exceptions to this rule.

Antidepressants

The tricyclic amine antidepressants and maprotiline have proven to be useful in adjusting the sleep-wake cycle of patients, potentiating narcotics, relieving pain and reducing anxiety and

depression.^{1,2} The other antidepressants have not proven to reduce pain. For the serotonin sparing antidepressants, such as doxepin, maprotiline and amitriptyline, one begins with a dose of 25 mg to 50 mg for adults or 10 mg to 25 mg for the elderly and children.

The dose is adjusted upwardly until an adequate night's sleep is obtained, and the patient feels rested during the day. At the same time, the patients must be monitored for adverse side effects such as excessive anticholinergic activities. The sleep inducing properties should take effect within the first few days. This effect can be used to adjust the dose.

The action on pain becomes apparent in approximately one to two weeks, and the antidepressant effect becomes apparent in three to six weeks. The antianxiety properties generally start at two weeks and become fully developed by six weeks.

The norepinephrine and serotonin sparing and antidepressants, such as nortriptyline, desipramine, imipramine and clomipramine, can provide increased energy for people during the daytime. The antidepressants particularly have been useful in cases of neuropathy, which include deafferentation pains, neuralgias and pain associated with herpetic or post herpetic neuralgia.³

Anticonvulsants

Another group of drugs that has

been particularly useful for pain of neurologic origin are the anticonvulsants, phenytoin, carbamazepine, valproic acid and clonazepam.^{1,2} The medication that will work in a given patient can be determined only empirically. Each must be given at increasing doses until an appropriate therapeutic blood level is reached. The drug then should be continued for a two week trial. If it is not effective, discontinue it and proceed with the next drug in the series.

In general, the best sequence in which to try these agents would be carbamazepine, phenytoin, clonazepam and valproic acid. Side effects of excessive sedation, blood dyscrasias and other central nervous system effects should be monitored. The blood dyscrasias that are possible with these medications are perhaps not as important in a terminally ill patient.

Phenothiazines

Methotrimeprazine is the only phenothiazine that has prominent analgesic activities.⁴ It can provide an alternative to narcotics in patients for whom constipation, respiratory depression or nausea and vomiting prohibit the use of narcotics. Fifteen milligrams intramuscular (IM) of methotrimeprazine is equivalent to 10 mg IM morphine. It is only available for parenteral administration. Significant sedation generally follows the use of the drug. Also, it can cause postural hypotension and

extrapyramidal symptoms. However, tolerance to these effects will often develop over repeated administration. It is usual to give a test dose of 5 mg IM to see the effects. If that is successful, then doses of 10 mg to 20 mg IM are standard.

Chlorpromazine, prochlorperazine and fluphenazine all have been useful adjunct in some cases for patients being given narcotics.³ Whether these drugs increase the analgesia of narcotics is subject to question at this time. There are reports on both sides. They are effective in reducing agitation in those people who are excessively anxious, and they also are effective as antiemetics.

Chlorpromazine is generally administered in doses of 100 mg to 150 mg a day, prochlorperazine 10 mg orally a day and fluphenazine 1 mg to 3 mg a day. These doses can be increased by titration if needed. Excessive sedation and extrapyramidal symptoms may limit the use of these drugs. They also have strong anticholinergic effects such as blurred vision, dry mouth, tachycardia, urinary retention, constipation and, rarely, convulsions.

Haloperidol has been used to control nausea and vomiting.³ It is a more potent antiemetic than the phenothiazines and can cause fewer anticholinergic and sedative effects. It is a first line drug in the management of patients with acute psychosis and delirium. Generally, it is given at 0.5 mg to 1 mg orally two or three times a day. This can be increased if needed. Its effect on pain is unclear.

Benzodiazepines

Anxious patients may benefit from therapy using diazepam. There is, however, no evidence

that it has any effect on pain. Short-acting benzodiazepines such as triazolam, can be used to aid in nighttime sedation.

One of the newer benzodiazepines, alprazolam, may have a unique role in the treatment of pain in cancer patients. First, at a dose of 3 mg to 7 mg per day, it is both anxiolytic and antidepressant. The onset time of its antidepressant action is considerably shorter than for the tricyclic amines.²

Furthermore, it recently has been demonstrated to be effective for neuropathic pain associated

with citability and multifocal myoclonous. Seizures are a rare side effect.

Stimulants

Both amphetamine and methylphenidate have proven to potentiate narcotic analgesia.^{8,9,10} They also are effective in giving immediate relief to a depressed patient.¹¹ Oral doses of 5 mg to 10 mg in the morning and at noon can serve the purposes of ameliorating depression and increasing analgesia while, at the same time, minimizing sedation and mental confusion. Unfortunately, these

Anxious patients may benefit from therapy using diazepam. There is, however, no evidence that it has any effect on pain.

with malignancy.⁵ It generally should be administered at a starting dose of 1.5 mg per day with an upward titration to a maximum of 7 mg. A strong physical dependence develops for benzodiazepines. Therefore, if one wishes to discontinue them, it must be by a very slow taper. Generally, no more than a reduction of 10% to 15% every three to five days is acceptable.

Antihistamines

The antihistamine hydroxyzine can act as a mild tranquilizer with antihistaminic, antispasmodic and antiemetic qualities.³ It has been shown at a dose of 100 mg to potentiate narcotics.⁷ It provides a convenient way of aiding the patient in sleeping, as well as potentiating narcotic analgesia through the night. Side effects include occasional acute hyperex-

citability and multifocal myoclonous.

For example, these drugs could be used for a patient who is depressed, has continuing pain, exhibits too much daytime sedation and has difficulty sleeping at night. The patient could be given a slow-release morphine with the provision for rescue doses of immediate-release morphine. Also, the patient would take 10 mg of amphetamine in the morning and at noon and then 100 mg of hydroxyzine at night in order to relieve the depression, potentiate the narcotic and aid the patient in sleeping.

Calcitonin

Calcitonin is a peptide hormone that acts as a physiological antagonist to parathyroid hormone. It reduces bony absorption of calcium and has the opposite effect of parathyroid hormone on

the kidney by increasing renal calcium clearance. Recently, it has been effective in the reduction of pain in patients with bone metastases.^{12,13} Patients should receive 100 international units five times a week to obtain an effect. The effect continues to develop over at least a month. Its mechanism of action is not clear at this time. In one study, a greater and earlier analgesic activity was observed when the dose was increased to 400 international units per day.¹⁴ A short report also indicates that in 10 patients with a persistent or acute phantom limb pain nine of the patients responded immediately to injections of calcitonin.¹⁵ This report certainly offers an interesting and exciting possibility.

Corticosteroids

Corticosteroids have specific and nonspecific effects related to the management of malignancy.¹⁶ They have the ability to produce euphoria, increase appetite and contribute to the well-being of the patient. The specific effects predominantly are reported for pain due to metastases to the bone. They reduce inflammation and edema and may block the synthesis of arachidonic acid from which prostaglandin is derived.

Patients with epidural cord compression also benefit from the use of these compounds. A reasonable schedule of administration for dexamethasone might be an initial dose of 100 mg. It then would be tapered to a 4 mg to 16 mg dose for maintenance. In this case, the lowest dose of dexamethasone that yields the effect is

advisable. Methylprednisolone at a dose of 16 mg twice daily also has been effective.¹⁷

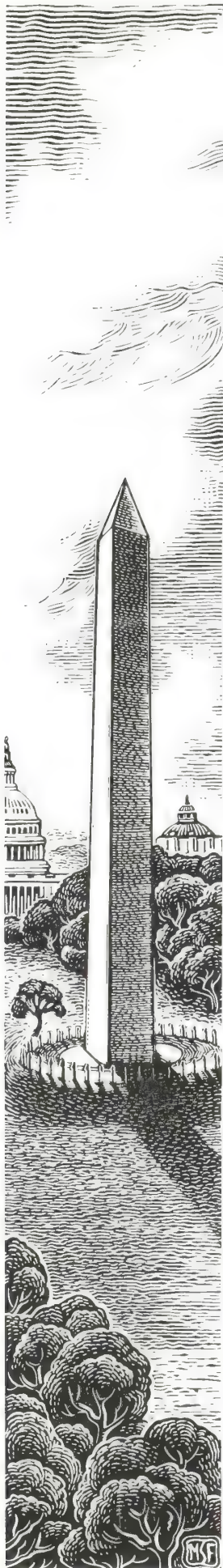
Steroid treatment often reduces pain due to radiation therapy. Steroid therapy also may ameliorate pain from tumor infiltration of the lumbosacral or brachial plexes.³

Of course, they do have significant potential risks associated with their use as fungal infections, gastrointestinal ulcers or osteoporosis. Furthermore, their discontinuance can lead to pseudo-rheumatism. □

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OVER A CENTURY AGO, a thousand visionary physicians across the nation bestowed a commemorative stone carving to the Washington Monument. This patriotic display symbolized their unrelenting devotion to a new republic founded on freedoms—including the freedom to practice medicine for the best possible health of all its people. *Today your help is needed to restore this symbol of our profession.*



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Summary of NIH Consensus Development Conference

Richard T. Miyamoto, M.D.
Mary Joe Osberger, Ph.D.
Indianapolis

Cochlear implantation for the treatment of profound sensorineural hearing loss has progressed from a medical curiosity to an accepted medical procedure. More than 3,000 people – children and adults – have been implanted with a variety of these devices.

Although no person has been restored to a state of normal hearing, significant benefits have been seen in most patients, and spectacular improvements have been documented in some. Yet, controversy still exists regarding several issues including candidate selection, single-channel or multichannel device, suitable preimplantation and postimplantation assessments and rehabilitation procedures.

Who is a suitable candidate for a cochlear implant? Suitable candidates comprise a very small and highly selected subset (less than 1%) of the 15 million people in the United States with a significant hearing impairment. Indications that favor a cochlear implant are a profound, bilateral sensorineural hearing loss with aided thresholds greater than 60 dB HL and 0% speech discrimination.

What are the advantages and the disadvantages of the different types of cochlear implants? Cochlear implants are categorized by

whether the electrodes are inserted into or placed outside the cochlea. Signals may be transmitted through one channel (a single channel) or several channels (a multichannel) and various features of speech may be transmitted through the device. Current evidence suggests that multichannel intracochlear stimulation produces superior speech-recognition performance compared to single-channel stimulation.

How effective are cochlear implants? A wide range of performance has been observed. Most patients perceive environmental sounds and improve their lip-reading ability. A few, about 5%, are able to carry on normal conversation without lip reading and are able to converse on the telephone.

What are the risks and limitations of cochlear implantation? Surgical risks and complications have been very minimal. Cochlear implants for children are classified by the U.S. Food and Drug Administration as investigational, although in September 1988 the ENT Devices Panel recommended pre-market approval of the 3M/House device for use in children. A minimal age limit of 2 years has been set for children for anatomic and neurodevelopmental reasons.

What are the important directions for future research? More research is needed to define appropriate patient populations such as the prelingually deafened

adults, visually impaired, learning-disabled and retarded. Much work is yet to be accomplished in the area of cochlear implants in children. Standardized tests for performance assessment need to be developed, and aural rehabilitation procedures need further refinement.

Conclusion

The cochlear implant is an important step in understanding, preventing and treating hearing impairment and associated language disorders. It appears that multichannel implants may have superior features in adults as compared to single-channel implants.

Copies of the NIH consensus statement on cochlear implants may be obtained by writing the U.S. Department of Health and Human Services, Public Health Service, Office of Medical Applications of Research, Building 1, Room 216, Bethesda, MD 20892. □

Dr. Miyamoto, professor and chairman, and Dr. Osberger, associate professor of audiology, are faculty members of the Indiana University School of Medicine, Department of Otolaryngology-Head and Neck Surgery, and were invited guest speakers at the May 1988 NIH Consensus Conference that generated this report.

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Marketing your practice: How to get started

Myra J. Borshoff, APR
Indianapolis

Editor's note: This is the first in a monthly series of three articles about marketing for physicians.

Physicians are bombarded from all fronts these days with information about marketing. Books, seminars, newsletters and consultants reach to busy physicians with urgent pleas of "read me," "attend this" and "listen to me."

With the overload of marketing information and, unfortunately at times, misinformation, it's understandable that many physicians delay making marketing commitments. The reasons most often cited by solo practitioners and small groups who have not yet engaged in marketing activities include:

- "Marketing is distasteful; it's inappropriate."
- "I already do 'marketing' with a newsletter."
- "I don't understand marketing."

Physicians who have felt or said any of these statements should be alerted that they are headed for potential trouble. Physicians are not immune from the dynamics of today's American marketplace: Consumers have choices.

A closer examination of those excuses, which most often act as barriers to marketing activities, provides the opportunity to present medical marketing in a con-

temporary and beneficial context.

"Marketing is distasteful; it's inappropriate"

Yes, marketing activities sometimes are presented in a less-than-tasteful manner. That doesn't mean marketing must be ostentatious or exceedingly solicitous. Marketing strategies based on solid research and implemented with discretion are completely feasible. Solid research, careful planning and professional implementation and evaluation ensure that the visible marketing components are properly in tune with the intended audience.

Some physicians feel the concept of marketing their profes-

sional services, architects, engineers, doctors, dentists and other professionals must undertake extensive marketing to build and maintain successful practices.

The only thing constant about the past decade in medicine is there has been little consistency. Uncertainty is the name of the game. Dramatic changes in the health care industry are underway. The health care pie is being divided among many hungry service providers. The private practice physician must compete to maintain his or her share and a good way to accomplish this is through effective marketing.

"I already do marketing – through a newsletter"

Too commonly, physicians mistake a component marketing activity, such as producing a newsletter, as the total of the marketing

experience. Marketing is not just a newsletter, an advertisement or a brochure. Those pieces of paper are the tangible results of marketing.

Marketing is a process.

The process starts with an assessment of the marketplace – what the consumer, in this case the patient, wants and/or needs. Pertinent market research is the absolute first step in any marketing program.

Too often, in today's sophisticated business environment, the art and science of marketing is elevated to an unrealistic level of

Solid research, careful planning and professional implementation and evaluation ensure that the visible marketing components are properly in tune with the intended audience.

sional services in itself is distasteful and the medical world is on a level above and independent of other consumer products and services. Those who believe that are generally unwilling to recognize that consumer trends do affect the practice of medicine – a phenomena that should not be ignored in the 1990s.

Not many years ago, professionals could rely on their reputations and good work to secure and continue a steady stream of patients or clients. That approach may not always be effective today. Now, many attorneys, ac-

complexity. In reality, marketing is essentially based on several common sense principles: 1) determine a consumer need; 2) produce a product or service that adequately meets the identified need; and 3) communicate the availability of the product or service to those who need it.

The marketing process can get bogged down on any of the three levels, but most frequently, the jam occurs in the determination of the consumer need (i.e., research).

"I don't understand marketing"

Marketing does not need to be a complicated undertaking. Since marketing is a process, it should be tackled step-by-step. Taken one phase at a time and coupled with comprehensive documentation, the marketing process is within the grasp of even the busiest physician.

The first step is market research. Market research is a careful look at both your internal operation and your external situation.

Internal assessment: To put the future of your practice in proper perspective, the first chunk of research must be with you, the physician. Questions to be answered include:

- How much more/less time am I willing to devote to my practice?
- What level of financial return do I expect from my practice in five years? In 10 years?
- What are my professional goals? (Examples might include teaching, participating in professional organizations or continuing my medical education.)

The internal assessment also must include the goals of the practice, whether the practice includes one or a group of doctors.

Practice goals must be deter-

mined by asking questions such as:

- Is the image of the practice appropriate?
- Is the current mix of patients correct?
- What is the relationship of the practice with referring physicians, hospitals, etc.?

Other important elements of the internal assessment include:

- A patient survey, either comprehensive or random selection;
- Evaluation of your physical plant or office environment;
- Objective analysis of your medical staff, including their knowledge, attitude and relationship with patients;
- Review of your services/profitability study. (What are you doing that's profitable or not profitable? What services are declining in importance? Are patients aware of all of your services?); and
- Are your services priced appropriately?

The total of your internal assessment is your practice profile, which is an objective and statistically based list of your practice's internal strengths and weaknesses. Although a complete and candid practice profile does not always produce the statements you want to see, there is some consolation in that you usually have a considerable measure of control over internal matters.

External assessment: The next step in the marketing process is to match your practice profile with the opportunities presented to your practice externally. To research these opportunities, carefully examine the following:

- Competition, including other physicians in the same specialty, nonphysician providers of health services or alternative care providers;

- Demographics of the community;
- Economic trends of the community;
- Changes in your specialty that will impact the type of services you can provide; and
- Governmental involvement (present and future) in your specialty.

Investigating these and other external research sources will give you an objective summary of the feasible opportunities for your practice.

The matching process of practice profile (internal assessment) with the practice opportunities (external assessment) combines easily in practice objectives. The practice objectives reflect your abilities to respond to the marketplace. These objectives are not necessarily many in number. Often, the objective of a practice can be accurately stated in one paragraph. Here's an example.

Practice objective: "To streamline the daily operations of the practice, providing physicians additional opportunities to perform specialty work in ophthalmology, and then selectively promoting that specialty service to referring physicians on the north and northwest sections of the city."

Not surprisingly, the practice objective(s) that is eventually determined sometimes could have been ventured before research activities. However, the research is essential to support assumptions, provide useful data, focus energies and formalize opinions. In other words, without the research and resulting conclusions, action in the right direction is seldom initiated.

All the appropriate and careful research in the world is worthless without documentation and organization; that's where the mar-

keting plan comes in. That phrase – marketing plan – conjures up more fear and/or disinterest than even the subject of marketing in general.

A marketing plan is simply your marketing planning process written down so it can guide you, encourage you and provide you with a mechanism to check your progress.

By providing the opportunity to organize your thoughts and mobilize your resources, the marketing plan can be short, simple and to-the-point. Whether it is 20 pages or two, the important thing is to, as the Nike ad says, "Just do it!"

To summarize, here's how you get off ground zero and start marketing your practice: 1) set a timetable for the marketing planning process and outline on paper each step to be undertaken; 2)

assess your internal operation, looking for weaknesses and strengths. This step will give you a realistic practice profile; 3) assess the external environment your practice is operating in today and tomorrow to determine your practice opportunities; and 4) match your practice profile against your practice opportunities to define your practice objectives.

The difficult part is over if you've made it this far. Now you know what has to be achieved for your practice to continue successfully.

The activities and communication tools necessary to execute your practice's marketing objectives will be covered in detail in part two of this series.

While undertaking any aspect of marketing, from planning through

the execution of specific activities, physicians should be reminded of the seven deadly sins of medical marketing: 1) failing to formalize your marketing effort; 2) equating marketing with advertising; 3) using follow-the-leader marketing; 4) emphasizing graphics over content in written materials; 5) failing to balance the marketing effort with concentration in just newsletters or advertising; 6) failing to make the marketing effort accountable; and 7) failing to support the marketing effort with fresh perspectives. □

The author is president of Borshoff & Co. Inc., a public relations and marketing communications firm in Indianapolis. Her firm's specialty services include professional services marketing.

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WARNINGS

- Cardiac Conduction:** CARDIZEM prolongs AV node refractory periods without significantly prolonging sinus node recovery time, except in patients with sick sinus syndrome. This effect may rarely result in abnormally slow heart rates (particularly in patients with sick sinus syndrome) or second- or third-degree AV block (nine of 2111 patients or 0.43%). Concomitant use of diltiazem with beta-blockers or digitalis may result in additive effects on cardiac conduction. A patient with Prinzmetal's angina developed periods of asystole (2 to 5 seconds) after a single dose of 60 mg of diltiazem.
- Congestive Heart Failure:** Although diltiazem has a negative inotropic effect in isolated animal tissue preparations, hemodynamic studies in humans with normal ventricular function have not shown a reduction in cardiac index nor consistent negative effects on contractility (dp/dt). An acute study of oral diltiazem in patients with impaired ventricular function (ejection fraction 24% ± 6%) showed improvement in indices of ventricular function without significant decrease in contractile function (dp/dt). Experience with the use of CARDIZEM (diltiazem hydrochloride) in combination with beta-blockers in patients with impaired ventricular function is limited. Caution should be exercised when using this combination.
- Hypotension:** Decreases in blood pressure associated with CARDIZEM therapy may occasionally result in symptomatic hypotension.
- Acute Hepatic Injury:** Mild elevations of transaminases with and without concomitant elevation in alkaline phosphatase and bilirubin have been observed in clinical studies. Such elevations were usually transient and frequently resolved even with continued diltiazem treatment. In rare instances, significant elevations in enzymes such as alkaline phosphatase, LDH, SGOT, SGPT, and other phenomena consistent with acute hepatic injury have been noted. These reactions tended to occur early after therapy initiation (1 to 8 weeks) and have been reversible upon discontinuation of drug therapy. The relationship to CARDIZEM is uncertain in some cases, but probable in some. (See PRECAUTIONS.)

PRECAUTIONS

General: CARDIZEM (diltiazem hydrochloride) is extensively metabolized by the liver and excreted by the kidneys and in bile. As with any drug given over prolonged periods, laboratory parameters should be monitored at regular intervals. The drug should be used with caution in patients with impaired renal or hepatic function. In subacute and chronic dog and rat studies designed to produce toxicity, high doses of diltiazem were associated with hepatic damage. In special subacute hepatic studies, oral doses of 125 mg/kg and higher in rats were associated with histological changes in the liver which were reversible when the drug was discontinued. In dogs, doses of 20 mg/kg were also associated with hepatic changes, however, these changes were reversible with continued dosing.

Dermatological events: (see ADVERSE REACTIONS section) may be transient and may disappear despite continued use of CARDIZEM. However, skin eruptions progressing to erythema multiforme and/or exfoliative dermatitis have also been infrequently reported. Should a dermatologic reaction persist, the drug should be discontinued.

Drug Interaction: Due to the potential for additive effects, caution and careful titration are warranted in patients receiving CARDIZEM concomitantly with any agents known to affect cardiac contractility and/or conduction. (See WARNINGS.) Pharmacologic studies indicate that there may be additive effects in prolonging AV conduction when using beta-blockers or digitalis concomitantly with CARDIZEM. (See WARNINGS.)

As with all drugs, care should be exercised when treating patients with multiple medications. CARDIZEM undergoes biotransformation by cytochrome P-450 mixed function oxidase. Coadministration of CARDIZEM with other agents which follow the same route of biotransformation may result in the competitive inhibition of metabolism. Doses of similarly metabolized drugs, particularly those of low therapeutic ratio or in patients with renal and/or hepatic impairment,

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may require adjustment when starting or stopping concomitantly administered CARDIZEM to maintain optimum therapeutic blood levels.

Beta-blockers: Controlled and uncontrolled domestic studies suggest that concomitant use of CARDIZEM and beta-blockers or digitalis is usually well tolerated, but available data are not sufficient to predict the effects of concomitant treatment in patients with left ventricular dysfunction or cardiac conduction abnormalities.

Administration of CARDIZEM (diltiazem hydrochloride) concomitantly with propranolol in five normal volunteers resulted in increased propranolol levels in all subjects and bioavailability of propranolol was increased approximately 50%. If combination therapy is initiated or withdrawn in conjunction with propranolol, an adjustment in the propranolol dose may be warranted. (See WARNINGS.)

Cimetidine: A study in six healthy volunteers has shown a significant increase in peak diltiazem plasma levels (58%) and area-under-the-curve (53%) after a 1-week course of cimetidine at 1,200 mg per day and diltiazem 60 mg per day. Ranitidine produced smaller nonsignificant increases. The effect may be mediated by cimetidine's known inhibition of hepatic cytochrome P-450, the enzyme system probably responsible for the first pass metabolism of diltiazem. Patients currently receiving diltiazem therapy should be carefully monitored for a change in pharmacological effect when initiating and discontinuing therapy with cimetidine. An adjustment in the diltiazem dose may be warranted.

Digitalis: Administration of CARDIZEM with digoxin in 24 healthy male subjects increased plasma digoxin concentrations approximately 20%. Another investigator found no increase in digoxin levels in 12 patients with coronary artery disease. Since there have been conflicting results regarding the effect of digoxin levels, it is recommended that digoxin levels be monitored when initiating, adjusting, and discontinuing CARDIZEM therapy to avoid possible over- or under digitalization. (See WARNINGS.)

Anesthetics: The depression of cardiac contractility, conductivity, and automaticity as well as the vascular dilation associated with anesthetics may be potentiated by calcium channel blockers. When used concomitantly, anesthetics and calcium blockers should be titrated carefully.

Carcinogenesis, Mutagenesis, Impairment of Fertility: A 24-month study in rats and a 21-month study in mice showed no evidence of carcinogenicity. There was also no mutagenic response in *in vitro* bacterial tests. No intrinsic effect on fertility was observed in rats.

Pregnancy: Category C. Reproduction studies have been conducted in mice, rats, and rabbits. Administration of doses ranging from five to ten times greater (on a mg/kg basis) than the daily recommended therapeutic dose has resulted in embryo and fetal lethality. These doses, in some studies, have been reported to cause skeletal abnormalities. In the perinatal postnatal studies, there was some reduction in early individual pup weights and survival rates. There was an increased incidence of stillbirths at doses of 20 times the human dose or greater. There are no well controlled studies in pregnant women, therefore, use of CARDIZEM in pregnant women only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: Diltiazem is excreted in human milk. One report suggests that concentrations in breast milk may approximate serum levels. If use of CARDIZEM is deemed essential, an alternative method of infant feeding should be instituted.

Pediatric Use: Safety and effectiveness in children have not been established.

ADVERSE REACTIONS

Serious adverse reactions have been rare in studies carried out to date, but it should be recognized that patients with impaired ventricular function and cardiac conduction abnormalities have usually been excluded from these studies.

The adverse events described below represent events observed in clinical studies of hypertensive patients receiving either CARDIZEM Tablets or CARDIZEM SR Capsules as well as experiences observed in studies of angina and during marketing. The most common events in hypertension studies are shown in a table with rates in placebo patients shown for comparison. Less common events are listed by body system; these include any adverse reactions seen in angina studies that were not observed in hypertension studies. In all hypertensive patients studied (over 900), the most common adverse events were edema (9%), headache (8%), dizziness (6%), asthenia (5%), sinus bradycardia (3%), flushing (3%), and 1° AV block (3%). Only edema and perhaps bradycardia and dizziness were dose related. The most common events observed in clinical studies (over 2,100 patients) of angina patients and hypertensive patients receiving CARDIZEM Tablets or CARDIZEM SR Capsules were (ie, greater than 1%) edema (5.4%), headache (4.5%), dizziness (3.4%), asthenia (2.8%), first degree AV block (1.8%), flushing (1.7%), nausea (1.6%), bradycardia (1.5%), and rash (1.5%).

DOUBLE BLIND PLACEBO CONTROLLED HYPERTENSION TRIALS		
Adverse	Diltiazem N=315 # pts (%)	Placebo N=211 # pts (%)
headache	38 (12%)	17 (8%)
AV block first degree	24 (7.6%)	4 (1.9%)
dizziness	22 (7%)	6 (2.8%)
edema	19 (6%)	2 (0.9%)
bradycardia	19 (6%)	3 (1.4%)
ECG abnormality	13 (4.1%)	3 (1.4%)
asthenia	10 (3.2%)	1 (0.5%)
constipation	5 (1.6%)	2 (0.9%)
dyspepsia	4 (1.3%)	1 (0.5%)
nausea	4 (1.3%)	2 (0.9%)
palpitations	4 (1.3%)	2 (0.9%)
polyuria	4 (1.3%)	2 (0.9%)
somnolence	4 (1.3%)	
alk phos increase	3 (1%)	1 (0.5%)
hypotension	3 (1%)	1 (0.5%)
insomnia	3 (1%)	1 (0.5%)
rash	3 (1%)	1 (0.5%)
AV block second degree	2 (0.6%)	

In addition, the following events were reported infrequently (less than 1%) or have been observed in angina trials. In many cases, the relation to drug is uncertain.

- Cardiovascular:** Angina, arrhythmia, bundle branch block, tachycardia, ventricular extrasystoles, congestive heart failure, syncope.
- Nervous System:** Amnesia, depression, gait abnormality, hallucinations, nervousness, paresthesia, personality change, tremor, tinnitus, tremor, abnormal dreams.
- Gastrointestinal:** Anorexia, diarrhea, dyspepsia, mild elevations of SGOT, SGPT, and LDH (see hepatic warnings), vomiting, weight increase, thirst.
- Dermatological:** Paresthesia, pruritus, photosensitivity, urticaria.
- Other:** Amblyopia, CPK increase, dyspnea, epistaxis, eye irritation, hyperglycemia, sexual difficulties, nasal congestion, nocturia, osteoarthral pain, impotence, dry mouth.

The following postmarketing events have been reported infrequently in patients receiving CARDIZEM: alopecia, gingival hyperplasia, erythema multiforme and leukopenia. Definitive cause and effect relationship between these events and CARDIZEM therapy cannot yet be established.

Issued 1/89

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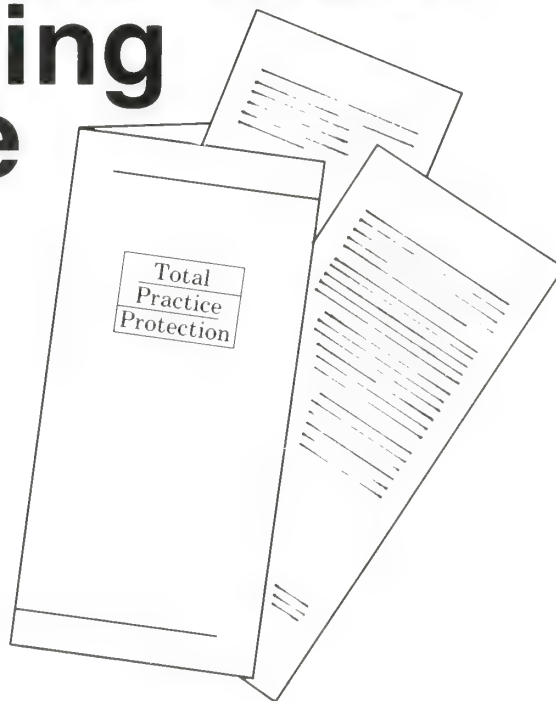
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Peer review proceedings

Robert W. Strohmeier Jr., J.D.
Indianapolis

In an effort to further improve the quality of medical care in Indiana and to reduce the number of medical malpractice claims filed, many hospitals and other health care providers now commonly use peer review committees for the evaluation of patient care. These committees may be standing committees formed to evaluate patient care on a continuing basis or committees formed only as needed. The responsibilities of these committees may vary but generally include the evaluation of qualifications of professional health care providers, patient care rendered by professional health care providers and the merits of a complaint filed against a professional health care provider. These committees are authorized and encouraged under both state and federal laws.¹

A peer review committee must meet certain criteria if the committee is to be afforded the broad protections of state and federal laws. Generally, the committee must be organized for the purpose of improving patient care. The committee must be organized by a professional health care organization such as a group of physicians, the professional staff of a hospital or health care facility or the governing board of a hospital or professional health care organization. Medical review panels formed to review medical malpractice claims under the Indiana Medical Malpractice Act do not constitute peer review committees.² Although a group of physi-

cians in private practice could organize a peer review committee to evaluate patient care, most peer review committees are organized by hospitals to review the qualifications of the professional staff or the merits of a complaint filed against a member of the staff.

Peer review committees organized by hospitals generally include physicians admitted to the staff of the hospital. As will be discussed later in this article, participants in peer review proceedings are given immunity from liability. This protection covers not only the members of the peer review committee but all personnel involved with the peer review committee, including the committee's employees, representatives, agents, attorneys, investigators, assistants, clerks, staff and other people or organizations who serve the peer review committee in any capacity.³

A peer review committee must meet certain criteria if the committee is to be afforded the broad protections of state and federal laws.

The peer review committee is responsible for collecting any information the committee believes will be helpful in evaluating the patient care in question. This could include hospital and medical records, reports of investigations, employment and personnel

files, statements of physicians and nurses and the specific charge made by a patient. Committee meetings generally are informal although a chairman usually is selected to oversee the proceedings. A committee member or another individual may act as secretary for the purpose of taking notes. An attorney generally is retained to advise the committee. Although the committee proceedings generally are considered confidential, the governing board of the hospital or professional health care organization may disclose the final action taken regarding a professional health care provider without violating the confidentiality provisions discussed below.⁴

Immunity for committee

It is expected that peer review committees will conduct their proceedings in good faith and objectively, keeping in mind the committee's primary purpose of improving patient care. Therefore, personnel of a peer review committee are granted immunity from liability for any acts or statements made in the confines of a peer review committee as long as they are made in good faith regarding the evaluation of patient care.⁵

Good faith requires that any act be taken or any statement be made without malice after a reasonable effort has been made to obtain the facts of the matter. Good faith further requires the acts be taken and the statements made in the reasonable belief they are warranted by the facts known. The acts of the personnel of a peer review committee are presumed to be taken in good faith, and any

person who alleges he or she has been damaged by the acts or statements of the committee must prove the acts were done and the statements made with malice.⁶

The personnel of a peer review committee are not the only ones immune from liability. Individuals who in good faith furnish records, information or assistance to a peer review committee are immune from any civil action arising from the furnishing of the records, information or assistance unless the individuals knowingly furnish false records or information.⁷

Although the statute provides immunity to the people listed above, this does not necessarily protect these individuals from being sued in the first instance. However, the immunity provisions of the statute are clear, and any individual who decides to sue the personnel of a peer review committee in light of this statute most likely will have the lawsuit dismissed and be obligated to pay the attorneys' fees and costs incurred by the wrongfully sued party.

Confidential proceedings

As the title implies, peer review is intended to be an informal review of a professional's conduct by other professionals in the same field with an eye toward policing the profession. Effective peer review can be accomplished only when those participating can rest in the assurance that any statements they might make about the conduct of a fellow professional will be held in confidence. By statute, all proceedings of a peer review committee are considered confidential, and all communications to a peer review committee are considered privileged communications entitled to protection.⁸

Neither the personnel of a peer review committee nor any participant in the proceedings of a peer review committee are permitted to reveal the content of any communications to or the records or determinations of a peer review committee.

As discussed above, the governing board of a hospital or professional health care organization may disclose the final action taken regarding a professional health care provider without violating this privilege. Even individuals who simply attend a peer review committee proceeding without any substantive involvement are not permitted and cannot be required to disclose any information acquired in connection with or in

cannot be questioned about his or her testimony to the committee, proceedings of the committee or about opinions formed as a result of the committee proceedings. The proceedings of a peer review committee are protected, but the underlying facts that may have resulted in the need for a peer review committee still are discoverable and admissible in evidence.

The peer review committee may waive this privilege, which then makes the records of and communications to the peer review committee subject to disclosure. Any waiver of the privilege must be in writing and executed on behalf of the peer review committee by its chairman, vice-chairman or secretary.¹¹ Peer review committees

... peer review is intended to be an informal review of a professional's conduct by other professionals in the same field with an eye toward policing the profession.

the course of the proceeding.⁹

As a result of the privilege associated with the proceedings of a peer review committee, the records and determinations of and communications to a peer review committee are not subject to subpoena or discovery or admissible in evidence, in any judicial or administrative proceeding, including any proceeding under the Indiana Medical Malpractice Act, unless the privilege is waived.¹⁰ This means that although a witness might be called to testify in a judicial or administrative proceeding about the facts pertaining to the treatment of a given patient, the witness who has in any capacity served a peer review committee

sometimes waive the privilege at the request of the physician who has been investigated by the committee so the physician can use the peer review committee proceedings in the defense in a malpractice action or in proceedings before a medical licensing board. A peer review committee formed by a hospital may waive the privilege if the hospital desires to use the findings of its peer review committee for accreditation purposes. A hospital may use information obtained by a peer review committee for legitimate, internal business purposes without waiving the privilege.¹²

The personnel of a peer review committee should take note that

the immunity from civil liability discussed above does not extend to any person who violates the confidentiality requirements.¹³ Thus, personnel of a peer review committee should take special care not to discuss peer review proceedings, including the identity of individuals subject to review, to ensure they are afforded the protection from civil liability.

Rights of health care providers under review

Peer review committees often are formed to evaluate the qualifications of professional health care providers, including physicians, psychologists and nurses. Any professional health care provider under investigation is permitted at any time to see records accumulated by a peer review committee pertaining to the health care provider's personal practice.

Also, the health care provider must be offered the opportunity to appear before the peer review committee with adequate representation to hear all charges and findings concerning his or her practice and to offer rebuttal information.¹⁴

Governing boards of hospitals generally are required to report to the medical licensing board the results and circumstances of any adverse disciplinary action taken regarding a physician on the medical staff or an applicant for the medical staff if the action results in voluntary or involuntary resignation, termination, nonappointment, revocation or a significant reduction of clinical privileges or staff membership.¹⁵

If the investigation by a hospital peer review committee could re-

sult in a report to the medical licensing board or the appropriate state board of registration and licensure for other health care providers, the health care provider is entitled to only evidentiary hearing before the peer review committee of the medical staff.¹⁶ The health care provider also is entitled to one additional hearing on appeal before the governing board of the hospital.¹⁶ The right to a hearing and appeal in cases regarding care provided in hospitals is confined to only those health care providers who are granted or who have applied for privileges as independent practitioners.¹⁷ The right to a hearing and appeal is not applicable to health care providers who are employees of the hospital or health care facility.¹⁷

Although the statute is not entirely clear on this point, it seems to allow a professional health care provider under investigation to waive the confidentiality of the peer review committee proceedings in order to allow disclosure of the proceedings to the appropriate disciplinary authority.¹⁸ Normally, the right to waive the confidentiality requirements rests solely with the peer review committee. Thus, although the peer review committee may not be required or desire to disclose the results of the peer review proceedings, the health care provider under investigation may desire and request the disclosure of the proceedings to the disciplinary authority in an effort to defend the charges.

Conclusion

Utilization of peer review com-

mittees has gained nationwide recognition through the passage of the Federal Healthcare Quality Improvement Act of 1986, which provides protections similar to those already in place in Indiana for personnel of peer review committees formed in compliance with the act.¹⁹ In passing the act, Congress found there was an overriding national need to provide incentive and protection for physicians engaging in effective professional peer review. Congress also noted that effective peer review can improve the quality of medical care as health care providers take an increasing role in policing their members. □

The author is associated with the law firm of Bingham Summers Welsh & Spilman, 2700 Market Tower, 10 West Market St., Indianapolis, IN 46204. The firm's litigation practice includes the defense of medical malpractice claims.

References

1. See Ind. Code §34-4-12.6, *et seq.*; Federal Healthcare Quality Improvement Act of 1986, 42 U.S.C. 11111, *et seq.*
2. Ind. Code §34-4-12.6-1.
3. Ind. Code §34-4-12.6-1(e).
4. Ind. Code §34-4-12.6-2(a).
5. Ind. Code §34-4-12.6-3(a).
6. Ind. Code §34-4-12.6-1(f).
7. Ind. Code §34-4-12.6-3(b).
8. Ind. Code §34-4-12.6-2(a).
9. *Id.*
10. Ind. Code §34-4-12.6-2(c).
11. *Id.*
12. Ind. Code §34-4-12.6-4.
13. Ind. Code §34-4-12.6-2(d).
14. Ind. Code §34-4-12.6-2(b).
15. Ind. Code §16-10-1-6.5(b).
16. Ind. Code §34-4-12.6-2(b).
17. *Id.*
18. *Id.*
19. 42 U.S.C. 11111, *et seq.*



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Compensating key employees

Gregory Wright, CFP
Indianapolis

Tax law changes make it increasingly difficult to "tilt" benefit plans in favor of key employees. The cost of providing similar benefits to non-key employees has caused some owners to avoid or terminate these plans. This is particularly true of retirement plans. However, a special type of hybrid-benefit compensation arrangement often is better than a cash bonus or pension plan.

Cash bonuses to a key person can help spawn a new competitor. Also, employers have realized that cash is less effective than non-cash forms of recognition, such as awards, prizes, trips, etc. However, both cash and non-cash provide only temporary results.

In the past, pension plans have been effective in retaining key employees. Unfortunately, new tax laws generally prevent discriminating in favor of key employees. Complex testing is required to prove the company is providing similar benefits to all employees, regardless of their value to the company. As it turns out, the new laws actually tend to discriminate against key employees.

These new laws have resulted in the wholesale termination of some plans, such as defined benefit pension plans. These plans were a business owner's ideal tax shelter and provided "golden handcuffs" for many key people. That's gone now, except in very limited circumstances. However, certain deferred bonus and hy-

brid-benefit plans allow the business owner to offer "pension-like" benefits to specific employees and yet avoid the detailed government reporting, compliance testing, huge costs, etc. of a qualified pension plan.

These plans can provide benefits at retirement, have a vesting schedule, allow stop-and-go funding, etc. and from the key employees' perspectives, essentially look like a pension plan. Also, these key employees feel special after being singled out and given benefits not available to the rank and file.

In one specific case, the owner of a construction company wanted to provide special benefits to two key employees, the controller and the construction manager. We developed a plan that provided a retirement benefit equal to one-half of preretirement pay, 10-year vesting, a death benefit equal to four times base annual salary and a disability benefit equal to one-half of base pay. The cost was equal to a 10% pay raise.

None of the other employees participated in the plan. The net after-tax cost to the company was much less than providing a much lower benefit to all employees. Also, this business owner believed that most employee benefit plans are not appreciated by employees. In his mind, they failed his original objective: to attract and retain key employees.

However, the new plan targeted the two individuals and met their basic needs of retirement income, estate protection and disability protection ... so long as they were employed at that company. If

they left before retirement, they could not take the insurance benefits with them and the deferred bonus amount paid to them depended on their years in the plan.

This plan also met the objectives of the business owner.

The cost of the plan was low. It benefited only those employees for whom he wanted to do something. Also, should either of these key employees leave, the vested bonus amounts are to be paid over five years as long as the employee does not compete against the current employer. If one of them joins a competitor or starts his own company, the payments stop.

This plan is effective in awarding and keeping key employees. They at least think twice before walking away from this employer or joining the competition. The plan's cost is considerably less than most traditional benefit plans.

If the increased regulation and costs of employee benefit programs do not meet your business objectives, consider a hybrid-benefit compensation plan. Often employers and key employees prefer them over the watered-down benefits now allowed by most traditional benefit plans. □

The author heads the executive and employee benefits divisions at the Conner Insurance Agency, Inc., in Indianapolis.

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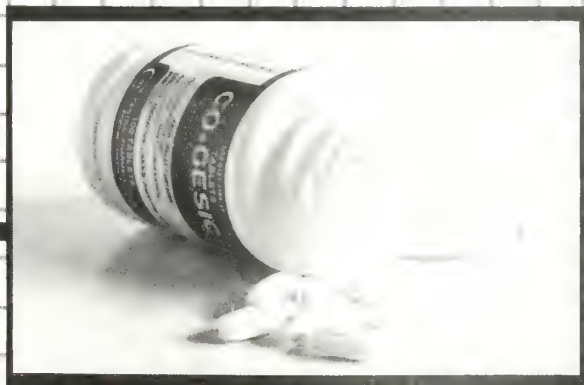
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A physician's nightmare

Philip S. Chua, M.D.
Merrillville

I had a bad dream the other night. And it was all too real.

I dreamt that socialized medicine had engulfed the entire United States. Private practice of medicine was not allowed by law. Every physician was a government employee, paid a tax-free salary of \$80 a month and permitted to rent from the state a two-bedroom apartment for \$2 a month. The physician was mandated to work according to the stringent rules and inflexible schedules set forth by a Supreme National Medical Council in Washington, D.C.

In my dream, the medical professional did not have to pay for any liability insurance premiums. There was no such thing. Malpractice suit was not allowed by the law of the land. Patients were on their own, with no recourse against the big government. Fear

was instilled in everyone. Some physicians were jailed for incomplete medical records. It was almost funny. But no one was laughing.

Frustrated, disillusioned and demoralized, we were all angry at ourselves for our indifference and selfishness in the past decades, which led to the demise of the free enterprise system in the practice of our profession. Individually and as a group, we felt terribly guilty for allowing non-physicians and politicians to take control of our destiny by default. We found ourselves repeatedly mumbling, "If only we were united and vigilant, we could have prevented this."

I must have been thrashing in my bed, clenching my jaw and grinding my teeth as I experienced the nightmare of my profession. I was drained and tired.

The telephone rang and broke the trance. I was spared the agony of a more prolonged dreadful

existence in my dream. I felt I successfully staged the greatest escape ever. I was happy to wake up. The nurse at the other end of the line said, "Doctor, you cannot do the coronary bypass scheduled for 7:30 this morning because we are still unable to get presurgical authorization. Medicare also wants to know what arteries are blocked and the percentage of stenoses. And on your case to follow, although the patient has a heart rate of only 37 beats per minute, the reviewer is questioning the need for a pacemaker since the patient had only two episodes of syncope."

Listening to what I just heard, I thought this was still a part of my dream. □

The author is a cardiovascular surgeon in private practice in northwest Indiana. He is the editor of the Lake County Medical Society Bulletin.

1988 Indiana State Medical Association membership report as of Dec. 31, 1988

Active 1st year Resident Senior Inactive Hardship Total

Adams	10	1	0	2	0	0	13
Bartholomew/Brown	72	0	0	6	6	1	85
Benton	4	0	0	1	0	0	5
Boone	17	1	1	4	2	0	25
Carroll	8	0	0	3	0	0	11
Cass	36	0	0	7	0	1	44
Clark	88	4	0	3	2	0	97
Clay	10	0	0	3	0	0	13
Clinton	12	1	0	5	0	0	18
Daviess/Martin	15	0	0	6	1	0	22
Dearborn/Ohio	25	1	0	2	0	0	28
Decatur	9	0	0	3	0	0	12
DeKalb	14	0	0	3	2	1	20
Delaware/Blackford	136	5	2	15	4	1	163
Dubois	35	0	0	2	0	0	37
Elkhart	128	5	1	18	8	0	160
Fayette/Franklin	20	0	0	2	1	0	23
Floyd	70	2	1	3	3	1	80
Fort Wayne/Allen	392	10	30	48	17	5	502
Fountain/Warren	10	0	0	2	0	0	12
Fulton	9	0	0	0	0	0	9
Gibson	9	0	0	3	0	1	13
Grant	69	1	2	17	3	1	93
Greene	11	0	0	6	0	0	17
Hamilton	38	4	0	1	0	0	43
Hancock	29	1	1	1	2	1	35
Harrison/Crawford	13	0	0	0	0	0	13
Hendricks	34	2	0	3	1	1	41
Henry	32	0	0	5	1	1	39
Howard	91	1	0	9	6	1	108
Huntington	16	1	0	2	2	0	21
Indpls./Marion	1,488	71	39	183	44	20	1,845
Jackson	22	0	0	2	0	0	24
Jennings	4	1	0	1	0	0	6
Jasper	9	1	0	2	0	1	13
Jay	16	0	0	1	0	0	17
Jefferson/Switzerland	30	1	0	6	0	0	37
Johnson	41	1	0	4	0	0	46
Knox	47	2	2	8	4	0	63
Kosciusko	30	1	0	0	1	1	33
LaGrange	9	0	0	1	1	0	11
Lake	598	3	2	65	18	2	688
LaPorte	109	2	0	13	5	0	129

Active 1st year Resident Senior Inactive Hardship Total

Lawrence	41	0	0	3	1	1	46
Madison	113	2	0	20	8	1	144
Marshall	20	0	0	1	3	0	24
Miami	15	0	0	3	0	0	18
Montgomery	25	1	0	2	1	0	29
Morgan	18	1	0	5	1	0	25
Newton	3	0	0	2	0	0	5
Noble	14	0	0	0	1	0	15
Orange	4	0	0	2	0	0	6
Owen/Monroe	133	1	2	13	6	0	155
Parke/Vermillion	4	1	1	3	2	0	11
Perry	4	0	0	1	0	0	5
Pike	1	0	0	0	0	0	1
Porter	115	3	0	9	3	0	130
Posey	2	0	0	1	0	0	3
Pulaski	4	0	0	1	0	0	5
Putnam	12	0	0	1	2	0	15
Randolph	11	0	0	3	2	1	17
Ripley	12	0	0	0	0	0	12
Rush	8	0	0	0	3	1	12
St. Joseph	255	14	1	50	14	2	336
Scott	7	0	0	2	0	0	9
Shelby	19	0	2	0	2	0	23
Spencer	2	0	0	0	1	0	3
Starke	8	1	0	0	1	0	10
Steuben	11	1	1	4	1	2	20
Sullivan	9	0	0	2	1	0	12
Tippecanoe	174	3	0	26	10	1	214
Tipton	7	0	0	4	0	0	11
Vanderburgh	323	7	2	44	18	3	397
Vigo	137	3	0	20	7	1	168
Wabash	23	0	0	4	1	0	28
Warrick	14	0	0	0	0	0	14
Washington	6	0	0	0	1	0	7
Wayne/Union	85	3	0	14	5	0	107
Wells	50	0	1	8	1	3	63
White	5	0	0	4	0	0	9
Whitley	8	0	0	2	0	1	11
RMS	0	0	272	0	0	0	272
1988 totals	5,567	164	363	729	227	56	7,106
1987 totals	5,404	142	423	739	211	64	6,983
1988 gain/loss	+163	+22	-60				

Membership increase

Paid members:	Increase from prior year:	Exempt:	Total:
1988	6,094	125	1,012
1987	5,969	298	1,014
1986	5,671	101	1,013
1985	5,570	303	900
1984	5,267	137	835

1989 ISMA Leadership Conference



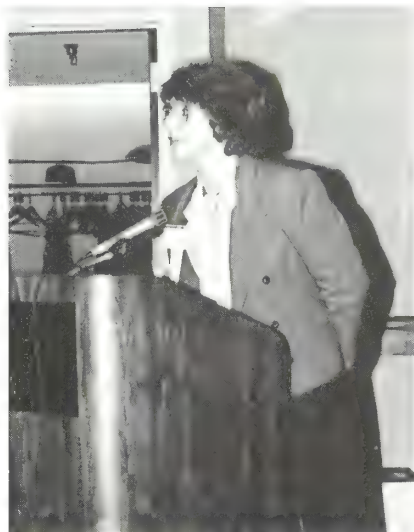
Dr. William C. Van Ness II of Summitville answers questions from Mike McGraw of WIBC Radio during a simulated television interview. The interview was part of the "Medicine, Media and Microphones" seminar conducted by Adele Lash, ISMA director of public relations.



Rosanna Iler of the ISMA Membership Department assists Dr. John D. MacDougall of Beech Grove and Dr. George H. Rawls of Indianapolis during morning registration. The conference was held March 11 and 12 at the Holiday Inn Union Station in Indianapolis.



Dr. Grant V. Rodkey of Massachusetts, a member of the American Medical Association Council on Medical Service, speaks about the "Relative Value Scale: An AMA Perspective" during the Saturday luncheon.



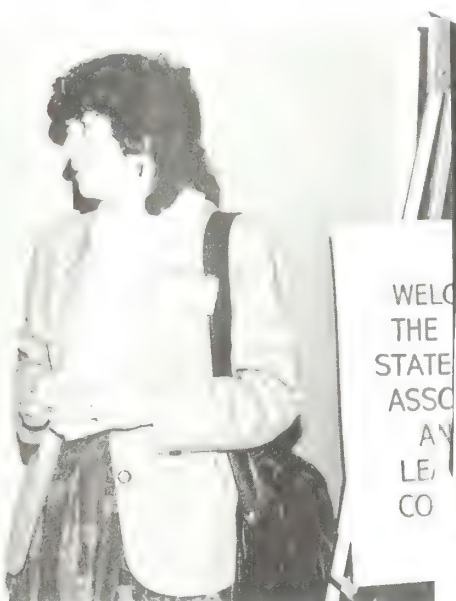
Mary Ann Cox of the Indiana State Board of Health answers questions during a morning session on "Radon Testing and Exposure."



Dr. Charles O. McCormick of Greenwood makes a point during a conversation with Michael Huntley (left), ISMA director of member services, and Dr. John M. Records of Franklin.



Mrs. Fred Dahling of New Haven and Dr. Dolores Burant of Elkhart visit before the morning general session begins.



Linda Mangels, director of loss control for Liabilities Limited of Austin, Texas, conducts part of the seminar on "Risk Management."



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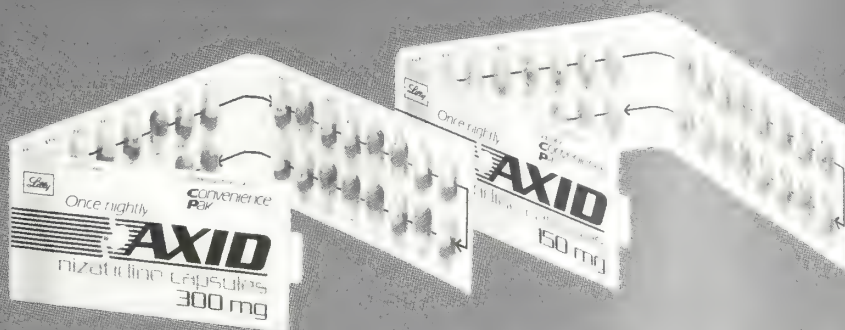
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Brief Summary

Consult the package literature for complete information

Indications and Usage Axid is indicated for up to eight weeks for the treatment of active duodenal ulcer. In most patients, the ulcer will heal within four weeks.

Axid is indicated for maintenance therapy for duodenal ulcer patients at a reduced dosage of 150 mg b.i.d. after healing of an active duodenal ulcer. The consequences of continuous therapy with Axid for longer than one year are not known.

Contraindication Axid is contraindicated in patients with known hypersensitivity to the drug and should be used with caution in patients with hypersensitivity to other H₂-receptor antagonists.

Precautions *General* — 1 Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.
2 Because nizatidine is excreted primarily by the kidney, dosage should be reduced in patients with moderate to severe renal insufficiency.

3 Pharmacokinetic studies in patients with hepatorenal syndrome have not been done. Part of the dose of nizatidine is metabolized in the liver. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

Laboratory Tests — False-positive tests for urobilinogen with Multistix® may occur during therapy with nizatidine.

Drug Interactions — No interactions have been observed between Axid and theophylline, chlorazepate, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450-linked drug-metabolizing enzyme system, therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increases in serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility — A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within the historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (30%) weight decrement as compared with concurrent controls and evidence of mid liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, prenatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy, Teratogenic Effects, Pregnancy Category C — Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect, but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus and at 50 mg/kg it produced ventricular anomaly, distended abdomen, spinal edema, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers — Studies conducted in lactating women have shown that ~0.1% of the administered oral dose of nizatidine is secreted in human milk in proportion to plasma concentrations. Caution should be exercised when administering nizatidine to a nursing mother.

Pediatric Use — Safety and effectiveness in children have not been established. Use in Elderly Patients — Ulcer healing rates in elderly patients are similar to those in younger age groups. The incidence rates of adverse events and laboratory test abnormalities are also similar to those seen in other age groups. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of nizatidine included almost 5,000 patients given nizatidine in studies of varying durations. Domestic placebo-controlled trials included over 1,300 patients given nizatidine and over 300 given placebo. Reported adverse events in the domestic placebo-controlled trials: sweating (1% vs 0.2%), urticaria (0.5% vs < 0.01%), and somnolence (2.4% vs 1.3%) were significantly more common in the nizatidine group. A variety of less common events were also reported; it was not possible to determine whether these were caused by nizatidine.

Hepatic — Hepatocellular injury, evidenced by elevated liver enzyme tests (SGOT [AST], SGPT [ALT], or alkaline phosphatase), occurred in some patients and was possibly or probably related to nizatidine. In some cases, there was marked elevation of SGOT, SGPT enzymes (greater than 500 IU/L) and, in a single instance, SGPT was greater than 2,000 IU/L. The overall rate of occurrences of elevated liver enzymes and elevations to three times the upper limit of normal, however, did not significantly differ from the rate of liver enzyme abnormalities in placebo-treated patients. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular — In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS — Rare cases of reversible mental confusion have been reported.

Endocrine — Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to Axid. Impotence and decreased libido were reported with equal frequency by patients who received Axid and by those given placebo. Rare reports of gynecomastia occurred.

Hematologic — Fatal thrombocytopenia was reported in a patient who was treated with Axid and another H₂-receptor antagonist. On previous occasions, this patient had experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumentary — Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity — As with other H₂-receptor antagonists, rare cases of anaphylaxis following administration of nizatidine have been reported. Because cross-sensitivity in this class of compounds has been observed, H₂-receptor antagonists should not be administered to individuals with a history of previous hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other — Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine administration have been reported.

Overdose — Overdoses of Axid have been reported rarely. The following is provided to serve as a guide should such an overdose be encountered.

Signs and Symptoms — There is little clinical experience with overdoses of Axid in humans. Test animals that received large doses of nizatidine have exhibited cholinergic-type effects, including lacrimation, salivation, emesis, miosis, and diarrhea. Single oral doses of 800 mg/kg in dogs and 1,200 mg/kg in monkeys were not lethal. Intravenous median lethal doses in the rat and mouse were 301 mg/kg and 232 mg/kg, respectively.

Treatment — To obtain up-to-date information about the treatment of overdose, a good resource is your certified regional Poison Control Center. Telephone numbers of certified poison control centers are listed in the Physicians' Desk Reference (PDR). In managing overdose, consider the possibility of multiple drug overdoses, interaction among drugs, and unusual drug kinetics in your patient.

If overdose occurs, use of activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance.

PV 2096 AMP

[013089]

Additional information available to the profession on request.

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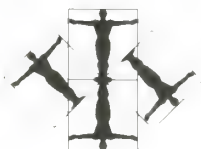
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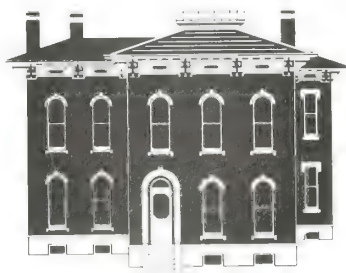
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cancer corner

William M. Dugan Jr., M.D. Indianapolis

The Little Red Door/Marion County Cancer Society has awarded one fellowship and two research grants to individuals working in the field of oncology.

The 1989 fellowship has been given to Mary E. Hartson, Ph.D., in the Department of Pediatric Oncology at the Indiana University School of Medicine. This \$15,000 award will aid Dr. Hartson in pursuing her research in small cell lung cancer. This form of lung cancer accounts for 20% to 25% of all cases of primary lung cancer. Lung cancer continues to be responsible for the largest percentage of cancer deaths.

Dr. Hartson's research concerns the effectiveness of low-level hyperthermia when used alone or in combination with chemotherapy as an effective treatment for small cell or non-small cell lung cancer. Hyperthermia is used to raise the body temperature and has been an area of interest at Indiana University School of Medicine.

Jeffrey Goldman, M.D., the 1988 fellowship recipient, was awarded an additional research grant by the Little Red Door. This grant will allow for the continuation of his research in childhood leukemia. Dr. Goldman is a member of the Department of Pediatrics at Riley Hospital.

Elizabeth A. Davenport, a third-

year graduate student in the Department of Biological Sciences at Purdue University, is the second grant recipient. Davenport is studying the genetic alterations that cause tumor formation. Her research study is titled "Determination of Intermediates in the Mechanism of Multistep Transformation."

Congratulations to Good Samaritan Hospital in Vincennes, Ind., on the opening of its new cancer center. At dedication ceremonies for the new Knox County facility, Gary Hippensteel, M.D., chairman of the Cancer Committee, and Roger Robison, M.D., radiation oncologist, spoke on the history of the cancer program.

Good Samaritan serves about 450 new cancer cases per year with its American College of Surgeons approved cancer program. The new state-of-the-art facility is designed to take the program into the 21st century.

The Indiana Society of Oncologists was chartered officially with the objective of studying the unique problems of medical oncology. Lloyd Everson, M.D., of Community Hospital, Indianapolis was elected president. Martin Neltner was selected executive secretary. The society hopes to join forces with other Midwestern groups of medical oncologists to address practice and business problems.

The Indiana Society of Oncologists plans to hold its meetings in conjunction with the Hoosier Oncology Group to elicit a wide range of opinions from practicing oncologists.

For further information about this organization, contact Dr. Everson.

Sexuality and Cancer, written by Leslie Schover, Ph.D., of the Cleveland Clinic Cancer Center, is now available to your patients from the American Cancer Society. According to Dr. Schover, "Studies suggest that 75% of cancer patients have sexual concerns, but only 10% tell their physicians."

This booklet is the first published material that provides cancer patients with thorough, accurate information about their ability to continue healthy sexual functioning following cancer treatment; the effect of cancer treatment on sexuality; strategies for dealing with sexual problems; and special aspects of cancer treatment such as ostomies, laryngectomies, limb amputation and mastectomy.

Patients need to know what to expect from the disease or treatment and whether problems are permanent or temporary. They also need to know options for rehabilitation.

For copies of these booklets, contact the American Cancer Society at (317) 872-4432 or your local chapter of the ACS. □

Lura Stone ISMA Auxiliary president

AMA Auxiliary president-elect Jean Hill is calling for unity between the AMA and the AMA Auxiliary as she prepares to take office in June. She challenges us to stand together to affect meaningful legislation, future health care and support for our families. Unity in purpose and action is needed.

In Indiana, we will continue to build on the teamwork that has developed between the ISMA and the ISMA Auxiliary. Dr. Fred Dahling, Dr. George Rawls, Ann Wrenn and I already have met to discuss our shared goals. I plan the following five-point program to achieve these goals:

1. Medical family support during times of stress is a new focus for this year. A stress management workshop is being planned with the assistance of Dr. Kete Cockrell, medical director of the Commission on Physician Assistance, for Sept. 16 and 17. A national speaker will be invited, providing CME credit for physicians. A variety of recreation and relaxation activities will be available in Jeffersonville, Ind. Watch for details in a summer issue of

INDIANA MEDICINE and *The Pulse*.

2. An auxiliary steering committee is working with the Indiana State Board of Health to determine how we can best assist with the Hoosier Infant Initiative, which strives to save the infants who die because of lack of prenatal care, resulting in low birth-weight. Educational projects designed to reduce teen pregnancy, AIDS and sexually transmitted diseases and drug, alcohol and tobacco abuse will continue to be stressed.

3. The ISMA Auxiliary will encourage the county auxiliaries to implement active programs that will increase awareness of state and national legislation. We will promote the Key Contact Program and IMPAC membership. "Our Day at the Capitol" will include an update on activity in the legislature and a luncheon meeting with our legislators.

4. AMA-ERF fundraisers and holiday sharing cards will be promoted again to provide support, encouragement and assistance to medical students. Gifts to either the Medical School Excellence Fund or the Medical Student Assistance Fund will be sent to a medical school as designated by the donor. Students have expressed their appreciation and



Lura Stone

often pledge to help others when they are able. This spirit perpetuates the ideals of AMA-ERF.

5. There is always a challenge to recruit, retain and revitalize our membership. The current challenge is to revise our state and county meetings and activities to fit the changing lifestyles of our members. If we are successful, we can increase our membership and member involvement. This reorganization must be designed to allow career member participation.

Together ISMA Auxiliary members and ISMA members can meet the challenges of the changes in medicine and make a positive difference. Together we can attain the unity that Jean Hill requests.

It is with great humility and an overwhelming sense of pride that I look forward to the year ahead. I hope together we can make the 1989-90 auxiliary year fit into a continuum of gradually doing a better and more professional job of being advocates for medicine. □

(continued on page 414)

Lura Stone

As a member of the Noble-LaGrange Medical Auxiliary, Lura Stone has held several offices, including the presidency. The AMA-ERF chairmanship was her first ISMA-A responsibility. Since then, she has served as Northern Area vice-president, first vice-president and president-elect.

Lura graduated from Hammond High School and earned a degree in elementary education from Indiana University. Some community activities have included singing in the church choir, serving on the church commission on education, teaching church school, directing Girl Scout Day Camp and serving a 10-year term on the West Noble School Board.

Lura and her husband, Dr. Robert Stone, live in Ligonier, Ind., and have two daughters.

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Memorial contributions made to the Foundation in lieu of flowers will be acknowledged by the secretary in a letter to the family of the deceased.

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■ news briefs

Books for the handicapped

The Indiana State Library, Division for the Blind and Physically Handicapped, in Indianapolis administers a free service providing Braille, recorded discs and cassettes and large-print materials for the blind and physically handicapped. The division serves 51 counties in central Indiana for recorded material and provides statewide Braille and large-print services.

Anyone who is unable to read or use standard printed materials as a result of temporary or permanent visual or physical limitations may receive the service. Approximately 79,500 Indiana residents may be eligible. Only about 13,200 Indiana readers, both children and adults, currently are being served through the program.

Physicians are encouraged to call the division, (317) 232-3684 or 1-800-622-4970, for additional information about the "talking-book" program.

AIDS journal available

The Physicians Association for AIDS Care is publishing a bi-monthly journal called *PAAC Notes*. The journal addresses the diversity of clinical, ethical, social, economic and political dimensions of the HIV epidemic. A one-year subscription for physicians in the United States and Canada is \$60.

For more information, write Physicians Association for AIDS Care, 101 W. Grand Ave., Suite 200, Chicago, IL 60610.

Academy changes name

The American Academy of Medical Directors has changed its name to the American College of Physician Executives effective Jan. 1, 1989. The organization also has

organized the American Board of Medical Management, which will provide board certification in the specialty of medical management.

Kinsey Institute gets grant

A \$1.75 million research grant from the National Institute of Drug Abuse has been awarded to June Reinisch, director, and Stephanie Sanders, assistant scientist, of the Kinsey Institute for Research in Sex, Gender and Reproduction at Indiana University.

The grant, which covers a four-and-a-half-year period, will enable Reinisch and Sanders to continue their research on the effects of barbiturates prescribed to pregnant women on the physical and behavioral development of their children.

CHAMPUS will pay for care

The Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) will pay for most care in children's hospitals and for neonatal services under the CHAMPUS DRG system, beginning with inpatient admissions on or after April 1, 1989. The new payment system applies to 49 states, the District of Columbia and Puerto Rico. Maryland is exempt from the CHAMPUS DRG system.

Providers who have questions about the children's DRG payment system should consult the Dec. 16, 1988, *Federal Register* or contact the claims processor for Indiana.

Professors receive grant

The National Institutes of Health have awarded a three-year, \$337,102 grant to two professors in the Purdue School of Science at Indiana University-Purdue University at Indianapolis for re-

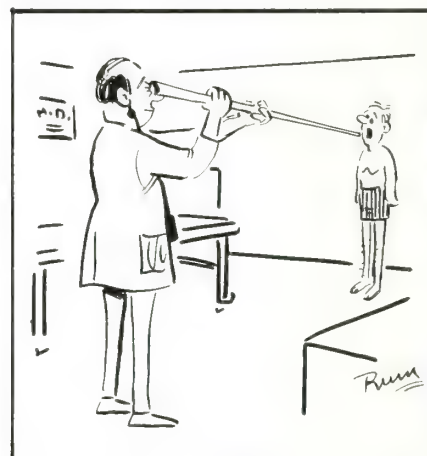
search that may lead to a rapid and economical method of identifying harmful inherited genes in individuals.

Harry W. Jarrett and Martin Bard, associate professors of biology, plan to develop a DNA purifying method to identify specific genes in people. The research could help health professionals identify known inherited genes, such as the genes for Huntington's, familial Alzheimer's or polycystic kidney diseases.

Assembly will be June 8-12

Indiana State Medical Association members are invited to attend the 18th Annual Scientific Assembly of the California Chapter of the American College of Emergency Physicians (ACEP) June 8 through 12.

The assembly will be at the Rancho Bernardo Inn, Rancho Bernardo, Calif. Tuition is \$250 for non-ACEP physicians with reduced fees for ACEP members, nurses and paramedics. For a brochure, contact the California ACEP office at (213) 374-4039. □



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AMA ALTERNATE DELEGATES (Terms end Dec. 31)

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 Martin J. O'Neill, Valparaiso (1989)
 Richard L. Reedy, Yorktown (1989)
 Shirley Thompson Khalouf, Marion (1990)
 Max N. Hoffman, Covington (1990)
 Edward L. Langston, Flora (1990)

DISTRICT OFFICERS AND MEETINGS

1 — Pres. Alan H. Johnson, Evansville
 Secy: Kishor R. Bhatt, Boonville
 Annual Meeting May 18, 1989
 2 — Pres. William A. Nice, Bloomington
 Secy: Andrew R. Jones, Bloomington
 Annual Meeting May 19, 1989
 3 — Pres. James M. Jacobi, Bedford
 Secy: Eric V. Schulz, Bedford
 Annual Meeting May 13, 1989
 4 — Pres. Frank L. Frable, Lawrenceburg
 Secy: William J. Granger, Lawrenceburg
 Annual Meeting May 3, 1989
 5 — Pres. Kennard B. Sproul, Brazil
 Secy: Peggy Sankey-Swaim, Rockville
 Annual Meeting Sept. 28, 1989
 6 — Pres. Robert J. Warren, Richmond

Secy: Stephen M. Dillinger, Greenfield
 Annual Meeting May 10, 1989
 7 — Pres. Lloyd C. Miller, Danville
 Secy: H. Marshall Trusler, Greenfield
 Annual Meeting 1989
 8 — Pres. L. Jane McDowell, Muncie
 Secy: Charles W. Bartholomew, Muncie
 Annual Meeting June 7, 1989
 9 — Pres. Timothy N. Brown, Crawfordsville
 Secy: R. Adrian Lanning, Noblesville
 Annual Meeting June 28, 1989
 10 — Pres. Mary E. Carroll, Crown Point
 Secy: Barron M. Palmer, Hammond
 Annual Meeting June 28, 1989
 11 — Pres. James P. McCann, Wabash
 Secy: Fred C. Poehler, La Fontaine
 Annual Meeting Sept. 20, 1989
 12 — Pres. Thomas D. Smith III, New Haven
 Secy: William J. Aeschliman, Fort Wayne
 Annual Meeting Sept. 21, 1989
 13 — Pres. G. Beach Gattman, Elkhart
 Secy: Thomas J. Eberts, South Bend
 Annual Meeting Sept. 13, 1989

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Legislation
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 David Goldenberg, Indianapolis
SURGERY
 Ted W. Grisell, Indianapolis
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 Michael Huntley, *Director of Member Services*
 John Wilson, *Director of Finance, Resident Medical Society*
 Adele Lash, *Director of Communications*
 Julie Newland, *Director of Government Relations*
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 Mary Alice Cary, *Executive Assistant*
 Rosanna Iler, *Membership, Auxiliary, Students*
 Tom Martens, *Members Health Insurance, CME Coordinator*
 Carolyn Downing, *Specialty Society Services*
 Tina Sims, *INDIANA MEDICINE*

■people



Dr. James A. Lemons, professor of pediatrics and director of the Section of Neonatal-Perinatal Medicine

at the Indiana University School of Medicine, was appointed to the Hugh McK. Landon Professorship in Pediatrics; the professorship is one of the most prestigious honors bestowed by the School of Medicine.

Dr. Jay L. Grosfeld, Lafayette, F. Page Professor and Chairman, Department of Surgery, Indiana University School of Medicine, was elected president of the Central Surgical Association at its recent meeting in Banff, Alberta, Canada.

Dr. Chung-Seng Lee, Fort Wayne, was named a fellow of the American College of Gastroenterology.

Dr. William R. Nunery of Indianapolis was the featured speaker at the annual meeting of the American College of Mohs Micrographic Surgery and Cutaneous Oncology in Fort Lauderdale, Fla.; his topic was "Anatomic Correlates of Periorbital Reconstruction."

Dr. David L. Tennant of Fort Wayne retired in 1988 after more than 40 years of medical practice in family practice and occupational medicine.

Dr. Frank J. Green has joined the clinical cardiology practice of Nasser, Smith and Pinkerton Cardiology, Inc., Indianapolis; Dr. Green's special interests are exercise physiology, echocardiography and receptor pharmacology.

Dr. Jerry L. House, Indianapolis, presented lectures on "Acoustic Neuromas" and "Audiology" at an Ear, Nose and Throat Board

Review Course in Chicago; he recently relocated his practice for otology and neurotology to 9002 N. Meridian St., Suite 204.

Dr. Randolph W. Lievertz of Indianapolis spoke on "Diagnosis and Management of Osteoporosis" during a postgraduate review course sponsored by the Illinois Academy of Family Physicians; he also spoke to the medical community of Union Town, Pa., on "Bone Loss and Lipids: The Effect of Estrogen Replacement Therapy."

Dr. John W. Luce and **Dr. Rade M. Pejic**, both of Michigan City, co-authored a clinical article that appeared in the January issue of *The Female Patient*; the article was on masculinizing adrenocortical tumor.

Dr. Fred O. Butler of Indianapolis was appointed to a three-year term as Cancer Liaison Physician for the cancer program at Hendricks County Hospital in Danville.

Dr. Dale A. Sloan of Fort Wayne received a three-year appointment as Cancer Liaison Physician for the cancer program at Parkview Memorial Hospital in Fort Wayne.

Dr. Louis A. Miceli, Munster, received a Service Proclamation Award from Trans Allied-Medical-Educational Services, Inc., of Flossmoor, Ill., in recognition of his many years of dedication to the health and welfare of handicapped children.

Dr. Steven R. Smith, director of occupational health and medicine for Community Hospital of Indianapolis, was named a fellow of the newly-formed American College of Occupational Medicine.

Dr. Douglas A. Triplett of Muncie was named vice-president and director of medical education at Ball Memorial Hospital; he

succeeds Dr. John L. Cullison, who retired after 20 years in the position.

Dr. Kevin B. Trewartha of Danville has been certified by the American Board of Internal Medicine.

Dr. Richard W. Jackson of Greenwood was named a fellow of the American Academy of Orthopaedic Surgeons.

Dr. James E. Szymanowski, Richmond, was named a fellow of the American College of Obstetricians and Gynecologists.

Dr. James L. Grainger of South Bend was elected president of the medical staff of Memorial Hospital of South Bend; **Dr. Larry G. Thompson** of South Bend is the vice-president, and **Dr. Norman Forrest** of South Bend is the secretary-treasurer.

Dr. Stephen W. Perkins, an Indianapolis facial plastic surgeon, appeared in a segment of "Good Morning, America" Feb. 28; he discussed rhinoplasty.

Dr. David G. Pietz of Bluffton was re-elected governor of the American College of Gastroenterology.

Dr. Dean L. Cook of South Bend was named to the Elkhart County Health Board.

Dr. Bruce Kephart of Bluffton was honored at a party upon his retirement after 38 years of practice at the Caylor-Nickel Clinic.

Dr. S. Rahim Farid of Brazil, Ind., was elected chief of staff at Clay County Hospital.

Dr. David M. Hadley of Plainfield was appointed to the Hendricks County Health Board.

Dr. John D. Miller, president of the Caylor-Nickel Clinic in Bluffton, was named a Sagamore of the Wabash.

Dr. James R. Davis of Indianapolis has been named medical

director of psychiatric services at Community Hospital North.

Dr. David C. Esarey of Shelbyville received the Sertoma Service to Mankind Award for the State of Indiana.

Dr. David C. Wilks of Merrillville was chosen president of the medical staff at Methodist Hospital of Gary; **Dr. Peter G. Mavrelis** is the secretary, and **Dr. Sakda Suwan** is the treasurer. □

New ISMA members

Thomas B. Anderson, M.D., Evansville, internal medicine.

James R. Baldwin, M.D., Muncie, anatomic and clinical pathology.

Stephen P. Bartold, M.D., Terre Haute, nuclear medicine.

Patti J. Binder, M.D., Evansville, family practice.

Danilo J. L. Gervacio, M.D., Jeffersonville, anesthesiology.

Frank J. Green, M.D., Indianapolis, internal medicine.

Samuel M. Hazlett III, M.D., Indianapolis, cardiovascular diseases.

Ann M. Hilmo, M.D., Valparaiso, neonatal/perinatal medicine.

Sandra C. Hollensead, M.D., Louisville, Ky., anatomic and clinical pathology.

Mark F. Kevin, M.D., Munster, internal medicine.

Thomas W. Kimmel, M.D., Evansville, anesthesiology.

Anthony F. Klee, M.D., Fort Wayne, anesthesiology.

Edgardo G. Leonidas, M.D., Columbia City, obstetrics and gynecology.

Walter L. Norton, M.D., Evansville, rheumatology.

Richard W. Pearson, M.D., Muncie, anatomic and clinical

pathology.

Isadore M. Pike, M.D., Evansville, oncology.

Rangasamy Ramachandran, M.D., Goshen, neurology.

Alessandra G. Thelia, M.D., Indianapolis, clinical pathology.

Vernon Vix Jr., M.D., Evansville, internal medicine.

Joseph F. Waling, M.D., Evansville, psychiatry.

Residents

B. J. Bryant, M.D., Indianapolis, general surgery.

Pamela H. Burnett, M.D., Carmel, family practice.

Edward H. Gillham, M.D., Indianapolis, otolaryngology.

Samuel A. Harmon, M.D., Noblesville, otolaryngology.

Peter S. Harvey, M.D., Fort Wayne, family practice.

Gina E. Laite, M.D., Indianapolis,

child psychiatry.

Frederick R. Lane, M.D., Indianapolis, colon and rectal surgery.

Gunwant S. Mallik, M.D., Greenwood, neurology.

Joseph P. Micho, M.D., Indianapolis, diagnostic radiology.

Michael L. Nicholas, M.D., Indianapolis, psychiatry.

John M. Reid, M.D., Indianapolis, obstetrics and gynecology.

Anthony C. Simchak, M.D., Indianapolis, neurology.

David W. Stein, M.D., Columbus, Ohio, otolaryngology.

Benjamin A. Van Raalte, M.D., Indianapolis, plastic surgery.

Mark T. Viehmann, M.D., Indianapolis, anesthesiology.

Gregory T. Walker, M.D., Springfield, Ill., urological surgery.

Lloyd Williams III, M.D., Fort Wayne, family practice. □

Physician Recognition Award recipients

The following ISMA physicians are recent recipients of the AMA's Physician Recognition Award. This award is official documentation of Continuing Medical Education hours earned and is acceptable proof in most states requiring CME in re-registration that the mandatory hours of CME have been accomplished.

Alley, Thomas W., Indianapolis
Archangel, Cesar S., Jeffersonville
Balasandiran, Emil A., Marion
Bennett, Thomas W., Fort Wayne
Black, Kenneth A., Portage
Dickhaus, Carol, Bargersville
Ferguson, James F., Bloomington
Flueckiger, Bryan E., Goshen
Kingma, Roy E., Demotte
Kubley, J. Daniel, Plymouth
Linderman, Richard B., Indianapolis

Marquez, Raul A., Indianapolis
McClure, Richard D., Carmel
McPike, Joseph D., Indianapolis
Pillay, Vijayaprasanthana, Merrillville
Reeck, Claude C. Jr., Indianapolis
Rettig, Arthur C., Indianapolis
Rosenberg, Gabriel J., Indianapolis
Solotkin, David, Indianapolis
Sonne, Thomas E., New Albany
Trusler, H. Marshall, Indianapolis
Weber, William E. Jr., Bloomington

■ obituaries

Rex W. Dixon, M.D.

Dr. Dixon, 79, Anderson, died in a nursing home Feb. 28.

He was a 1934 graduate of the Indiana University School of Medicine and a member of the American Academy of Family Physicians.

Dr. Dixon retired in 1983, after 50 years as a practicing physician.

Richard E. Gery, M.D.

Dr. Gery, 76, West Lafayette, a former chief of surgery at two Lafayette hospitals, died March 11 at St. Elizabeth Hospital Medical Center in West Lafayette.

He was a 1936 graduate of the Indiana University School of Medicine and an Army surgical officer during World War II. Dr. Gery was a general surgeon at the Arnett Clinic in Lafayette from 1941 to 1975, when he retired. He also served twice as president of the clinic's board of directors. He had been chief of surgery and chief of staff at Home Hospital and St. Elizabeth Hospital Medical Center.

Dr. Gery was named a Sagamore of the Wabash by Gov. Roger D. Branigin and was a member of the ISMA Fifty Year Club.

Roger A. Hemphill, M.D.

Dr. Hemphill, 82, a former chief of staff of Roudebush Veterans Administration Medical Center in Indianapolis, died March 1 at St. Vincent Hospital in Indianapolis.

He was a 1930 graduate of Case Western Reserve University Medical School in Cleveland, Ohio. He also had been chief of staff for Veterans Administration hospitals

in Cleveland and in Dublin, Ga., before retiring in 1979.

Dr. Hemphill was a member of the American College of Physicians and the American Thoracic Society and was certified by the American Board of Internal Medicine.

Arlington M. Hudson, M.D.

Dr. Hudson, 67, a family practitioner, died in Lake Jackson, Texas, Jan. 16.

He was a 1952 graduate of the St. Louis University Medical School and a Navy veteran of World War II. Dr. Hudson practiced medicine in Connersville from 1953 to 1974, when he moved to Texas.

He was a diplomate of the American Board of Family Practice and a member of the AMA and the American Academy of Family Physicians.

Walter J. Jurgensen, M.D.

Dr. Jurgensen, 73, a retired Fort Wayne family practitioner, died at

his home Feb. 18.

He was a 1944 graduate of the Indiana University School of Medicine and a Medical Corps veteran of World War II. Dr. Jurgensen was a past president of the Fort Wayne Academy of Family Physicians and a staff physician at Lutheran Hospital.

He retired in 1980 after 33 years of family practice.

Robert J. Miller Sr., M.D.

Dr. Miller, 80, a retired Martinsville general practitioner, died March 8 at Bloomington Hospital.

He received his medical degree in 1937 from the Indiana University School of Medicine. He was former chief of staff at Morgan County Hospital and an Army Air Force veteran of World War II.

Dr. Miller, a member of the American Society of Abdominal Surgeons, practiced in Evansville from 1940 to 1961, before he opened a practice in Paragon. He retired in 1976. □

Memorials: Indiana Medical Foundation

The Indiana Medical Foundation, Inc., was formed by the Indiana State Medical Association "for religious, charitable, scientific, literary or educational purposes." It provides financial assistance to support the educational mission of INDIANA MEDICINE.

Contributions made to the foundation are deductible by donors in accordance with the Internal Revenue Code. Gifts are deductible for federal estate and gift tax purposes.

The foundation is pleased to acknowledge the receipt of gifts in remembrance of the following individuals:

J. Melvin Masters, M.D.
Nancy A. Roeske, M.D.
Richard Sharp
Elsie A. Reid
Murray DeArmond, M.D.

William R. Clark, M.D.
John W. Beeler, M.D.
Mildred Ramsey
Earl Mericle, M.D.
John Bush
Dallas McKelvey

Everybody's creative

Arthur R. Pell, Ph.D.
Consultant, Dale Carnegie & Ass.

Gary Field pondered about an idea he had that could increase productivity by a simple change in methods. Should he tell his boss? The last time he had made a suggestion, his supervisor poo-pooed it. He said it wouldn't work. Never gave him a chance to explain it. Why bother now?

Just because you may believe your ideas may be rejected should not stop you from being creative. It is easy to give in to discouragement, but unless you keep coming up with ideas, you will stifle your own creative capabilities. Innovation must be honed by constant use. People tend to censor themselves by worrying about how others will receive their ideas. Self-censorship is far worse than criticism of others because it makes one feel inadequate. You will make mistakes; you will make suggestions that do not work; you may even be ridiculed by your boss or your peers. Don't let this stop you. Einstein, Edison, Whitney and Watt were all ridiculed many times. Keep those creative ideas coming.

Blocking Creativity

Everybody is creative. Unfortunately, the creative juices which flow so easily when nurtured are cut off in most people—from childhood on—by the imposition of over-analysis and conformity by teachers, parents and eventually their bosses. Too often creativity is blocked by red-light thinking. "Stop this," "It's against company policy," "We never did it that way." Instead of looking for reasons not to try new ideas, we should look at new ideas with open minds. Turn on the green light. Explore it further. Expand your thinking about it beyond the obvious.

Every idea is not necessarily going to work or is even worthwhile pursuing. However, by at least thinking about it and talking to others about it, you can explore its viability. If it should be rejected, learn the reasons. Do not lose heart. Often the idea, as good as it appears, may not fit the specific application or be appropriate at that time. This does not mean it is not good. It also should not be interpreted as a personal affront. It was the idea that was rejected—not you.

Developing Creativity

Most people do not really believe that they are creative. All their lives they have been taught that creativity is some sort of special talent possessed only by artists, inventors and geniuses. Not true. Psychologists have proven that creative thinking can be developed. Here are some of the things you can do to make you a more creative person.

Observation:

One doesn't have to dream up ideas to be creative. By observing things around us and applying what we learn to other situations is just as creative as total innovation.

Stan Lynch, manager of Hooper Steel in Las Vegas, noted that as more and more gas stations became "self-service" and no longer had facilities for oil change and lubrication of cars, rapid lubrication stations sprang up to meet this need. Stan used one of them for his car and was pleased with the speed and quality of the work.

For years Hooper Steel had sent its trucks to the service department of the dealer for their regular lubrications. This required sending two people to bring the truck to the dealer (one to drive the other back to the shop in his or her car), leave the truck at the dealer all

day and return to pick up the truck—again using the time of two people.

"Why not use the rapid lube station for our trucks?" thought Stan. The result: By sending one driver to the rapid lube station and having that person wait about 30 minutes while the truck was being serviced, Stan Lynch saved his company about \$1600 a month in out-of-pocket service costs and lost time. In addition they had the use of the truck for most of the day.

Modification:

Can you modify an existing product or concept to create something different? The founders of "Think Big" modified standard products by making enlarged versions of them. Their giant facsimiles of popular products ranging from pencils and telephone message pads to animals and furniture created a whole new market in advertising, decoration and novelties.

The growth of our computer and electronic industry is based on modification by the miniaturizing of electronic systems and components into microchips.

Substitution:

Darlene Alioto, office manager of Mass Mailers, was having a difficult time retaining personnel in an extremely dull routine job: stuffing brochures and samples into envelopes. The nature of the job was such that it could not be done by the standard automated equipment. Not only was the turnover cost expensive, but she could never be sure that somebody would be there to do the job. She reasoned that if so-called "normal" people found this job so boring, perhaps mentally retarded people might not. By filling the jobs with these "slow learners," Darlene was able to hire workers who have become steady and valued employees.

Eliminations:

Gil Waterman was irate. His company added still another form for salespeople to complete. How could he be out there selling when there was so much paper work? When he complained to his sales manager, she shrugged her shoulders and said they needed the information "upstairs." Gil took all the forms he was required to complete, set them side by side and analyzed what information was required. It became apparent that there was a good deal of duplication of data. Instead of griping about it, Gil designed a new form that would provide the necessary facts to management and was easy to complete. This not only made the salesperson's job easier, but saved the company considerable time and money. An added benefit: it started the company on a systematic review and revision of all forms leading to elimination of many outdated and unnecessary reports.

These are only a few ways the creative juices can be stimulated. By stretching your imagination, by expanding your horizons, by breaking with conventional approaches to problems, you can become more inventive, solve difficult problems and initiate and implement exciting new concepts. This will not only be of benefit to your company, but will give you that great feeling of accomplishment when you see your ideas successfully implemented.

Pocket/purse size reprints may be purchased (10 for \$10.00) or (25 for \$20.00) from Dale Carnegie & Associates, Inc. 1475 Franklin Avenue, Garden City, NY 11530

■ classifieds

INTERNAL MEDICINE PHYSICIAN

needed for new practice to be located on the southwest side of Indianapolis. Send CV to Physician, P.O. Box 474, Carmel, IN 46032.

MEDICAL ONCOLOGIST (BC or BE) -

Full-time oncologist needed for busy, growing practice. Send CV to Oncology, 8330 Naab Road, Suite 135, Indianapolis, IN 46260.

FAMILY PRACTICE - Acute care facility in central Iowa seeks family practitioner to join group. Thriving practice. Two clinics with strong hospital support. Call coverage and backup excellent. Obstetrics required. Hospital and clinics well-equipped and have spacious facilities. Desirable community. Offering competitive income and benefits. Call Michael Krier, 1-800-332-0488.

RENT DELUXE CONDOMINIUM on Kauai's fabulous North Shore. 45-hole golf course, Princeville, site of PGA event, ranked in top 100 courses in the world. Secluded beach, windsurfing and snorkeling. Phone (317) 662-6257.

BOARD CERTIFIED radiologist in his early 30s, trained in all modalities, wishes to relocate to the Midwest. Prefers solo or at most two-man group with one or more busy hospitals who have MR or potential for it along with the usual diagnostic modalities. Licensed in Illinois, Kentucky and Indiana. Call (502) 825-8375.

CENTRAL INDIANA - Full or part-time emergency medicine position available immediately. BE/BC in family practice, internal medicine or emergency medicine. 80-bed hospital with approximately 7,000 visits annually. Located 25 miles from Indianapolis on major interstate. Paid malpractice. Contact: M.P. Forkin, M.D., Witham Memorial Hospital, P.O. Box 1200, Lebanon, IN 46052, (317) 482-8667.

FAMILY PRACTICE - Hospital-sponsored clinic opportunity. Dynamic, growth-oriented hospital in beautiful north central Wisconsin is seeking two family physicians for a new clinic facility currently being constructed. The administrative burdens of medical practice will be minimized in this hospital-managed clinic. The hospital has committed to an income and benefit package that is significantly higher than similar opportunities. Package includes base income, incentive bonus, malpractice, disability, signing bonus and student loan reduction/forgiveness program. All relocation costs will be borne by the hospital. Please contact: Dan McCormick, President, Allen McCormick, France Place, Suite 920, 3601 Minnesota Drive, Bloomington, MN 55435, (612) 835-5123.

FAMILY PHYSICIANS needed to join growing MD multi-specialty group. Board-certified or board-eligible preferred. Salary negotiable plus bonus and excellent fringe benefits. Send CV to Family Care, Inc., 150 W. Angela Blvd., South Bend, IN 46617.

VALPARAISO, INDIANA - Full- or part-time physician experienced in emergency medicine, family medicine or ambulatory care of all age groups to staff urgent care center seeing 12,000+ patients per year. Affiliated with full-service hospital and EMS system. Contact: Don Wadle, Assistant Administrator, 814 LaPorte Ave., Valparaiso, IN 46383, (219) 759-6120. Enclose CV with mailing.

ITEMS FOR SALE: ATL 4000 S/L and Ultramark IV ultrasound units. Both almost new. Fully equipped, all accessories. Complete medical library. More than 30 journal titles from the past 10 years, bound. Books, shelves, fixtures. Topaz line conditioner 25/40. Mark IV sigmoidoscopy table. EMI CT unit. Will deliver. Call (502) 825-8375.

PEDIATRICIAN, RICHMOND - To join five-person group. Excellent opportunity. Pediatric Center, 1434 Chester Blvd., Richmond, IN 47374. (317) 966-5527.

FOR RENT - Doctor's office. 1,300 square feet. Heat furnished. Ideal for specialist or GP. Excellent parking. Rensselaer, Ind. Call Dr. T. Henley, (219) 866-7552.

GENERAL SURGEON, BE/BC to join me in my solo general surgery practice. Small town (7,000) in northeast Indiana. A great lake area, good place to rear a family. Would be nice if you shared my interests in aviation. Send CV to Joseph A. Greenlee Jr., M.D., F.A.C.S., 439 Water St., Kendallville, IN 46755 or call (219) 347-3093, home, or (219) 347-2231, office.

FAMILY PHYSICIAN, general practitioner or internist wanted to join three-man group in west central Indiana. Competitive salary and percentage arrangement. Partnership arrangement possible after one year. Contact Frank Swaim, M.D., Parke Clinic, 503 Anderson St., Rockville, IN 47872; (317) 569-3182.

FAMILY PRACTICE PHYSICIAN wanted for part-time, two or three days per week, office only, occasional night call. Potential \$50,000 per year income. To join practicing physicians. Excellent part-time job for a physician who is the parent of growing children. Greenfield is 15 minutes from Indianapolis on Interstate 70 and provides a rural atmosphere. New office with excellent facilities. Write: James T. Anderson, M.D., 400 Green Meadows Drive, Greenfield, IN 46140.

FOR SALE: Lifeline multi-function ECG testing system and treadmill, fully automated, for resting and stress ECG procedures, capable of Holter monitoring. Call (317) 674-7771.

BE A PART of an exciting new community developing in north central Indiana. A professional complex intended to house medical/dental specialists is currently under construction. Rapidly growing population of middle and upper class residents. Office space can be built to your specifications. Contact JCM Realty: (219) 232-2314.

INTERNIST - Indianapolis practice. Seeking internist with an interest in geriatrics. Excellent salary and benefits including CME and malpractice. Flexible scheduling. CV to Judy Burnett, 4930 N. Pennsylvania, Indianapolis, IN 46205.

IMMEDIATE CARE PHYSICIANS

WANTED - Need to be trained and/or experienced in areas of medicine that deal with acute/urgent care, such as minor trauma, acute illnesses and injuries and physical exams in all age groups. No hospital work. Greater Indianapolis area. Well-known group. Good salary/fringe benefit package. Contact: Michael D. Bishop, M.D., FACEP, Emergency Care Physicians, 640 S. Walker St., Ste. A, Bloomington, IN 47401 - (812) 333-2731.

FAMILY PRACTICE OPPORTUNITY - BC/BE; north central Indiana; flexible ER schedule for fully accredited county hospital in return for exceptional income, opportunity to set up own zero overhead practice, comprehensive benefits with all factors negotiable to meet specific practitioner needs. Send CV or contact collect: James Wyatt, Corporate Staffing Resources, 420 S. Fourth St., Elkhart, IN 46516 - (219) 522-2396.

INTERNIST BE/BC - North Shore Internal Medicine, PC is seeking an energetic general internist to enjoy the benefits of a rapidly expanding practice. New office close to hospital. Michigan State Medical School Campus. Send resume to 2420 First Ave. South, Escanaba, MI 49829 - (906) 786-1563.

RENT LUXURIOUS FLORIDA condominium, Hutchinson Island. Two bedroom, two bath. On golf course, pool, private beach. Call Tom Stayton, (317) 237-4535.

CENTRAL INDIANA - Physician-owned emergency group accepting applications for full-time, career-oriented emergency physicians. Flexible work schedules and excellent benefit package. Part-time and directorship positions also available. Send CV or contact Sherry Bussel, Midwest Medical Management, Inc., 528 Turtle Creek, North Drive, Suite F-4, Indianapolis, IN 46227 - (317) 783-7474.

EMERGENCY PHYSICIAN - Excellent opportunity for experienced emergency physician. Full-time position available in three-man group expanding to four. Guaranteed rate of compensation. Malpractice insurance provided. 150-bed hospital with 15,000 ER patients per year. C/O Mark G. Doyle, M.D., 1000 N. 16th St., New Castle, IN 47362 - (317) 521-1159.

FAMILY PRACTICE FOR SALE - Small town, high income. Hospital in town, OB/ER/ optional. Hospital may assist financially. Chicago 90 minutes. South Bend 60 minutes. Reply: P.O. Box 93, Valparaiso, IN 46384.

INTERNIST/OR INTENSIVIST: BC/BE to join a busy three-man practice with special interest in hospital intensive care, plus consultative and primary care practice in the Indianapolis area. Will offer partnership. Position available immediately. Reply: Box 19616, Indianapolis, IN 46219.

INDIANAPOLIS, INDIANA - MetroHealth, a division of Methodist Hospital, is seeking board certified or board eligible physicians in OB/GYN, internal medicine, family medicine and dermatology (part-time position). MetroHealth, an established multi-specialty physician group, offers an excellent blend of practice and lifestyle, professional liability and competitive salary and benefits. Please contact: Lowell M. Weiner, M.D., Medical Director, MetroHealth, P. O. Box 1367, Indianapolis, IN - (317) 929-2713.

ILLINOIS - Great opportunity for an experienced emergency physician to join a career emergency group practicing in western and southwestern suburbs of Chicago. Please contact Debbie Aber (312) 327-0777 or send your CV to: Emergency Medicine S.C., 2142 N. Sedgwick St., Chicago, IL 60614.

INDIANA - Excellent opportunity for an experienced physician to join a career emergency group practicing in northwestern Indiana near Chicago. Please contact Debbie Aber (312) 327-0777 or send your CV to: Emergency Medicine S.C., 2142 N. Sedgwick St., Chicago, IL 60614. ▢

IMPORTANT NOTICE

The Medical Licensing Board of Indiana sent renewal notices May 1 for license renewal fees due June 30, 1989. There is no grace period this year. Any physician who does not pay the renewal fee by the June 30 deadline will have to pay a \$50 penalty in addition to the \$50 renewal fee. If you have moved since last receiving your renewal registration form, please notify the Medical Licensing Board.

A FINAL REMINDER: Failure to renew your license will render your license to practice medicine invalid.

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Are you moving?

If so, please send change of address to the Indiana State Medical Association, Membership Department, 3935 N. Meridian St., Indianapolis, IN 46208, at least six weeks before you move.

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IMPORTANT - Attach mailing label from your last copy of *INDIANA MEDICINE* here:

In moderate depression and anxiety

- ➔ 74% of patients experienced improved sleep after the first *h.s.* dose¹
- ➔ First-week improvement in somatic symptoms¹
- ➔ 50% greater improvement with Limbitrol in the first week than with amitriptyline alone²

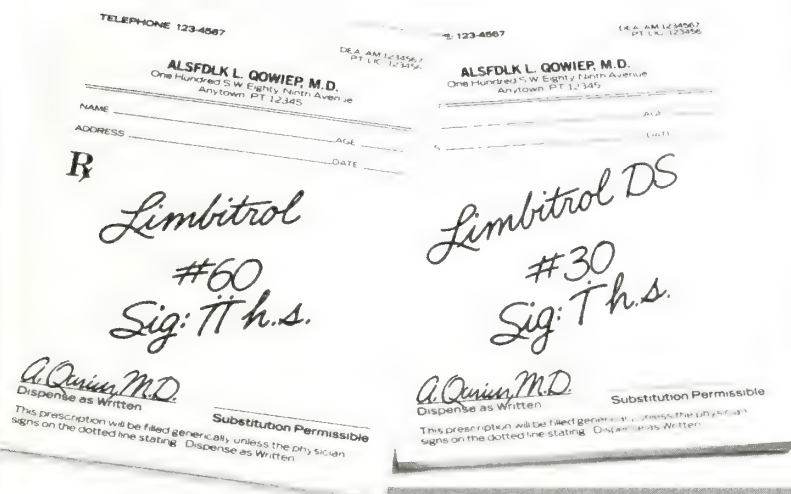
Protect Your Prescribing Decision:
Specify "Do not substitute."

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Each tablet contains 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) (N)



References: 1. Data on file, Hoffmann-La Roche Inc., Nutley, NJ. 2. Feighner JP, et al: *Psychopharmacology* 61:217-225, Mar 22, 1979.

Limbitrol®

Tranquilizer—Antidepressant

Before prescribing, please consult complete product information, a summary of which follows:

Contraindications: Known hypersensitivity to benzodiazepines or tricyclic antidepressants; concomitant use with MAOIs or within 14 days of monoamine oxidase inhibitors (then initiate cautiously, gradually increasing dosage until optimal response is achieved); during acute recovery phase following myocardial infarction.

Warnings: Use with caution in patients with history of urinary retention or angle-closure glaucoma. Severe constipation may occur when used with anticholinergics. Closely supervise cardiovascular patients. Arrhythmias, sinus tachycardia, prolongation of conduction time, myocardial infarction and stroke reported with tricyclic antidepressants, especially in high doses. Caution patients about possible combined effects with alcohol and other CNS depressants and against hazardous occupations requiring complete mental alertness (e.g., operating machinery, driving).

Usage in Pregnancy: Use of minor tranquilizers during the first trimester should almost always be avoided because of increased risk of congenital malformations. Consider possibility of pregnancy when instituting therapy.

Withdrawal symptoms of the barbiturate type have occurred after discontinuation of benzodiazepines (see Drug Abuse and Dependence).

Precautions: Use cautiously in patients with a history of seizures, in hyperthyroid patients, those on thyroid medication, patients with impaired renal or hepatic function. Because of suicidal ideation in depressed patients, do not permit easy access to large quantities of drug. Periodic liver function tests and blood counts recommended during prolonged treatment. Amitriptyline may block action of guanethidine or similar antihypertensives. When tricyclic antidepressants are used concomitantly with cimetidine (Tagamet), clinically significant effects have been reported involving delayed elimination and increasing steady-state concentrations of the tricyclic drugs. Use of Limbitrol with other psychotropic drugs has not been evaluated; sedative effects may be additive. Discontinue several days before surgery. Limit concomitant administration of ECT to essential treatment. See Warnings for precautions about pregnancy. Should not be taken during the nursing period or by children under 12. In elderly and debilitated, limit to smallest effective dosage to preclude ataxia, oversedation, confusion or anticholinergic effects. Inform patients to consult physician before increasing dose or abruptly discontinuing this drug.

Adverse Reactions: Most frequent: drowsiness, dry mouth, constipation, blurred vision, dizziness, bloating. Less frequent: vivid dreams, impotence, tremor, confusion, nasal congestion. Rare: granulocytopenia, jaundice, hepatic dysfunction. Others: many symptoms associated with depression including anorexia, fatigue, weakness, restlessness, lethargy.

Adverse reactions not reported with Limbitrol but reported with one or both components or closely related drugs: **Cardiovascular:** Hypotension, hypertension, tachycardia, palpitations, myocardial infarction, arrhythmias, heart block, stroke. **Psychiatric:** Euphoria, apprehension, poor concentration, delusions, hallucinations, hypomania, increased or decreased libido. **Neurologic:** Incoordination, ataxia, numbness, tingling and paresthesias of the extremities, extrapyramidal symptoms, syncope, changes in EEG patterns. **Anticholinergic:** Disturbance of accommodation, paralytic ileus, urinary retention, dilatation of urinary tract. **Allergic:** Skin rash, urticaria, photosensitization, edema of face and tongue, pruritus. **Hematologic:** Bone marrow depression including agranulocytosis, eosinophilia, purpura, thrombocytopenia. **Gastrointestinal:** Nausea, epigastric distress, vomiting, anorexia, stomatitis, peculiar taste, diarrhea, black tongue. **Endocrine:** Testicular swelling, gynecomastia in the male, breast enlargement, galactorrhea and minor menstrual irregularities in the female, elevation and lowering of blood sugar levels, and syndrome of inappropriate ADH (antidiuretic hormone) secretion. **Other:** Headache, weight gain or loss, increased perspiration, urinary frequency, mydriasis, jaundice, alopecia, parotid swelling.

Drug Abuse and Dependence: Withdrawal symptoms similar to those noted with barbiturates and alcohol have occurred following abrupt discontinuance of chlordiazepoxide; more severe seen after excessive doses over extended periods; milder after taking continuously at therapeutic levels for several months. Withdrawal symptoms also reported with abrupt amitriptyline discontinuation. Therefore, after extended therapy, avoid abrupt discontinuation and taper dosage. Carefully supervise addiction-prone individuals because of predisposition to habituation and dependence.

Overdosage: Immediately hospitalize patient. Treat symptomatically and supportively. I.V. administration of 1 to 3 mg physostigmine salicylate may reverse symptoms of amitriptyline poisoning. See complete product information for manifestation and treatment.

How Supplied: Double strength (DS) Tablets, white, film-coated, each containing 10 mg chlordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt), and Tablets, blue, film-coated, each containing 5 mg chlordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt)—bottles of 100 and 500; Tel-E-Dose® packages of 100; Prescription Paks of 50.



Roche Products

Roche Products Inc.
Manati, Puerto Rico 00701

PI 0288

In the depressed and anxious patient

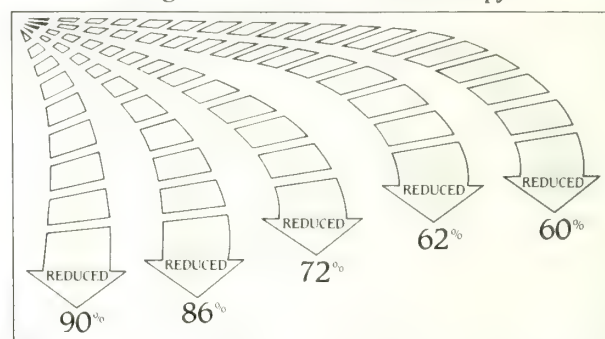
See Improvement In The First Week...¹

And The Weeks That Follow

- 74% of patients experienced improved sleep after the first *h.s.* dose¹
- First-week reduction in somatic symptoms¹

Caution patients about the combined effects of Limbitrol with alcohol or other CNS depressants and about activities requiring complete mental alertness, such as operating machinery or driving a car. In general, limit dosage to the lowest effective amount in elderly patients.

Percentage of Reduction in Individual Somatic Symptoms During First Week of Limbitrol Therapy*



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*Patients often presented with more than one somatic symptom.

Limbitrol[®]

Each tablet contains 5 mg clordiazepoxide and 12.5 mg amitriptyline (as the hydrochloride salt) (IV)

Limbitrol DS[®]

Each tablet contains 10 mg clordiazepoxide and 25 mg amitriptyline (as the hydrochloride salt) (IV)

ROCHE Roche Products

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Please see summary of product information inside back cover.



INDIANA MEDICINE



The Journal of the Indiana State Medical Association

June 1989

Vol. 82, No. 6

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MATEC: Retrofitting Health Professionals for the AIDS Era

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INDIANA MEDICINE

The Journal of the Indiana State Medical Association

June 1989

Vol. 82, No. 6

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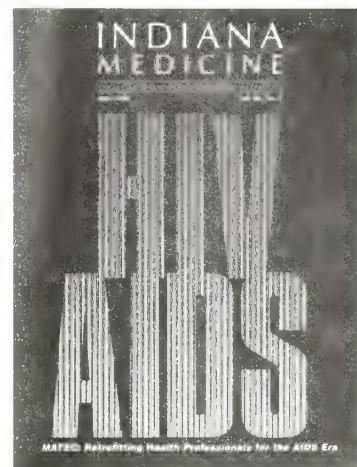
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Cover story on page 460. Cover design by Diane Alfonso, a graphic designer with the Publications and Information Services at Indiana University - Purdue University at Indianapolis. This is the first in a series of three articles on AIDS.

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All issues since 1967 are available on microfilm from University Microfilms International, 300 N. Zeeb Road, Ann Arbor, MI 48106. Indexed in *Index Medicus* and *Hospital Literature Index*.

Advertising rates and data available upon request. INDIANA MEDICINE reserves the right to accept or reject advertising copy.

OIG recommends changes in referrals to physician labs

The AMA is questioning conclusions drawn from a new study released by the Office of Inspector General (OIG) indicating that patients of physicians who own or invest in labs receive 45% more lab services than Medicare patients in general. The OIG report recommends six possible options for addressing greater utilization of services by patients of physician-owners and investors.

- Implement a post-payment utilization review by carriers directed at physicians who own or invest in other health care facilities.
- Require physicians to disclose financial interest to patients.
- Improve enforcement of current anti-kickback authorities.
- Institute private right of action for anti-kickback cases.
- Prohibit physicians from referring patients to certain types of entities in which they have a financial interest.
- Prohibit physicians from referring patients to any entity in which they have a financial interest.

The AMA supports the first five options but opposes the latter. Without physician investment, there often is no other avenue to improve the quality of health care locally. Investment in new facilities improves patient access to care, the AMA says.

Key Contact seminars offered

The ISMA Government Relations Department will conduct regional Key Contact seminars during the summer and early fall. The seminars will provide information about the legislative process and how to establish local grass-roots lobbying networks. If you are interested in having a Key Contact Seminar in your area, call Kim Williams or Julie Newland at 1-800-382-1721.

Constituent Skills Workshop scheduled for August

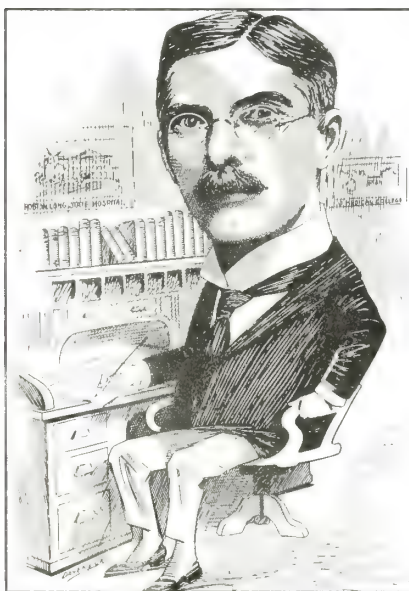
Political consultants, Michael E. Dunn and associates, AMA legislative staff and a member of the Indiana General Assembly will join the ISMA staff for a Constituent Skills Workshop Aug. 23. The workshop, sponsored by IMPAC and ISMA's Government Relations Department, will update physicians and spouses in federal legislative and political skills. Scheduled from 8:30 a.m. to 4:30 p.m., at the Adams Mark Hotel in Indianapolis, the conference will cover: the importance of political participation; legislative process fundamentals; federal and state legislative briefings; and a role-playing exercise. There is no cost to attend, but space is limited to 50. Call Susan Grant at ISMA for more information. □

■ medical museum notes

**Charles A. Bonsett, M.D.
Indianapolis**

These physicians illustrated in caricature are identified with medical education in Indiana at the turn of the century.

Dr. John F. Barnhill (1865 to



Dr. John F. Barnhill, physician.

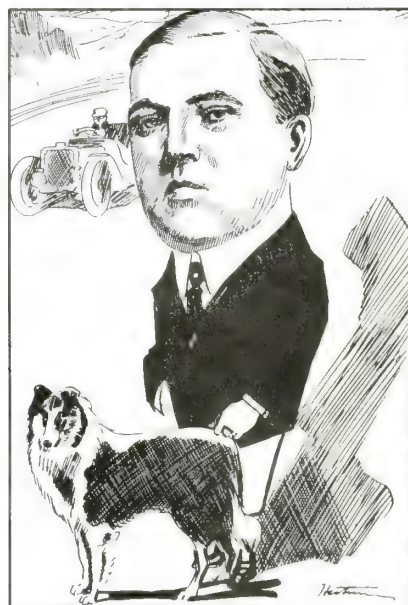


Dr. Joseph Rilus Eastman, general surgeon, The Joseph Eastman Hospital.

1943) was a graduate of the Central College of Physicians and Surgeons in Indianapolis in 1888. He took a leading part in establishing the Indiana University School of Medicine. Barnhill Drive on the Indiana University Medical Center campus is not named for him as many people erroneously believe, but rather for one of Dr. Barnhill's ancestors.

Dr. Joseph Rilus Eastman (1872 to 1943) graduated from the Central College of Physicians and Surgeons in Indianapolis in 1894. Dr. Eastman was a founder and governor of the American College of Surgeons and was a professor of surgery at the Indiana University School of Medicine. The hospital founded by his father is shown in the background.

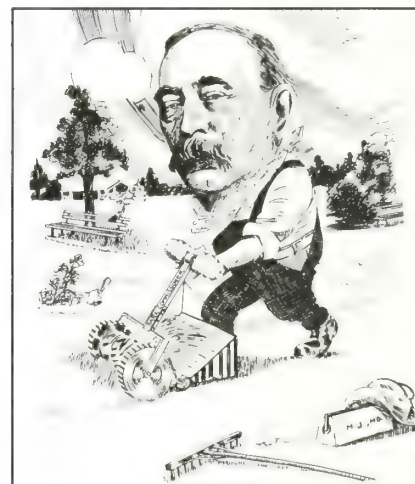
Dr. Thomas B. Eastman (1869 to 1918), was the brother of Joseph Rilus Eastman and son of Dr. Joseph Eastman (a celebrated pioneer surgeon in Indiana). Dr. Eastman was a former president of the Indianapolis Board of



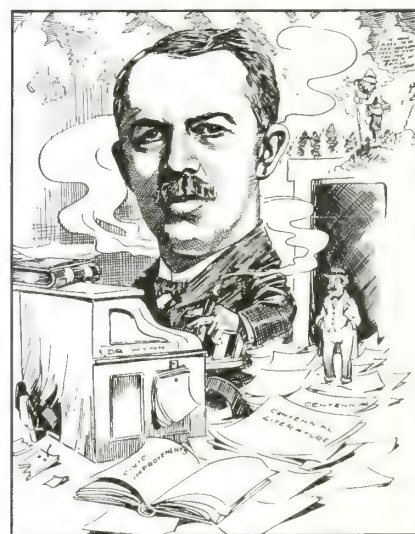
Dr. Thomas B. Eastman, surgeon.

Health and a member of the faculty of the Indiana University School of Medicine.

Dr. Henry Jameson (1848 to 1924) had two careers. In his medical career, he held several different chairs in the Medical College of Indiana. At the time of the union of the proprietary schools with the Indiana University School of Medicine, he was dean of the Indiana Medical Col-
(continued on page 459)



Dr. Henry Jameson, physician.



Dr. Frank B. Wynn, physician.



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■ what's new

Cervical Cap Limited, in an agreement with Lamberts (Dalston) Limited of Luton, England, will distribute the Prentif™ Cavity-Rim Cervical Cap in the United States and Canada after receiving approval from the U.S. Food and Drug Administration almost a year ago. Prentif is the only cervical cap approved for use in the United States by the FDA. The cap is a prescription device, initially fitted by a physician. Women are taught how to use it and then can place and remove it themselves. During clinical investigations spanning more than 10 years, more than 50,000 women tested the device without toxic shock syndrome, undue bleeding or significant infection.

The American Society of Internal Medicine's new guide, "Increasing Office Efficiency," can help physicians and their staffs cope with the intensifying administrative demands of medical practice. The guide contains suggestions on how to weed out factors that hamper office efficiency by making the best use of time, effort, skills, talents and technological resources. This guide is one in a series of 14. The guides are \$3 each if ordered individually or \$20 for a set of any eight guides.

Roche Laboratories has introduced new, single vial packaging for Roferon®-A. The new package eliminates the significant financial investment and storage space required with standard 10-vial supplies. Roferon®-A is the only marketed alfa interferon available in a convenient, ready-to-use solution that can be self-administered at home. It is used for the treatment of hairy cell leukemia and AIDS-related Kaposi's sarcoma in select patients.

Bristol-Meyers Co. has introduced Questran® Light, a better tasting, low calorie, less bulky formulation of its cholesterol-lowering drug, Questran®. Known generally as cholestyramine, Questran is recognized as a "drug of first choice" in cholesterol reduction, according to the National Institutes of Health (NIH). Questran was the drug used in the NIH's 10-year Lipid Research Committee-Coronary Primary Prevention Trial in which those who followed a diet moderately low in cholesterol and took the recommended dosage of Questran reduced their risk of coronary heart disease by 39.3%.

American Biogenetic Sciences, a University of Notre Dame-based company, has announced an economical and accurate diagnostic test kit to measure a patient's risk for heart attack or stroke. The test kit determines the level of fibrinogen in a patient's blood. The test, which is suitable for a doctor's office, may be available for distribution in Europe before the end of this year and for U.S. distribution before the end of 1990.

Eastman Kodak Co. has introduced SureCell herpes (HSV) test kit. The kit is the first rapid test that may be performed in the physician's office without expensive laboratory instruments. It

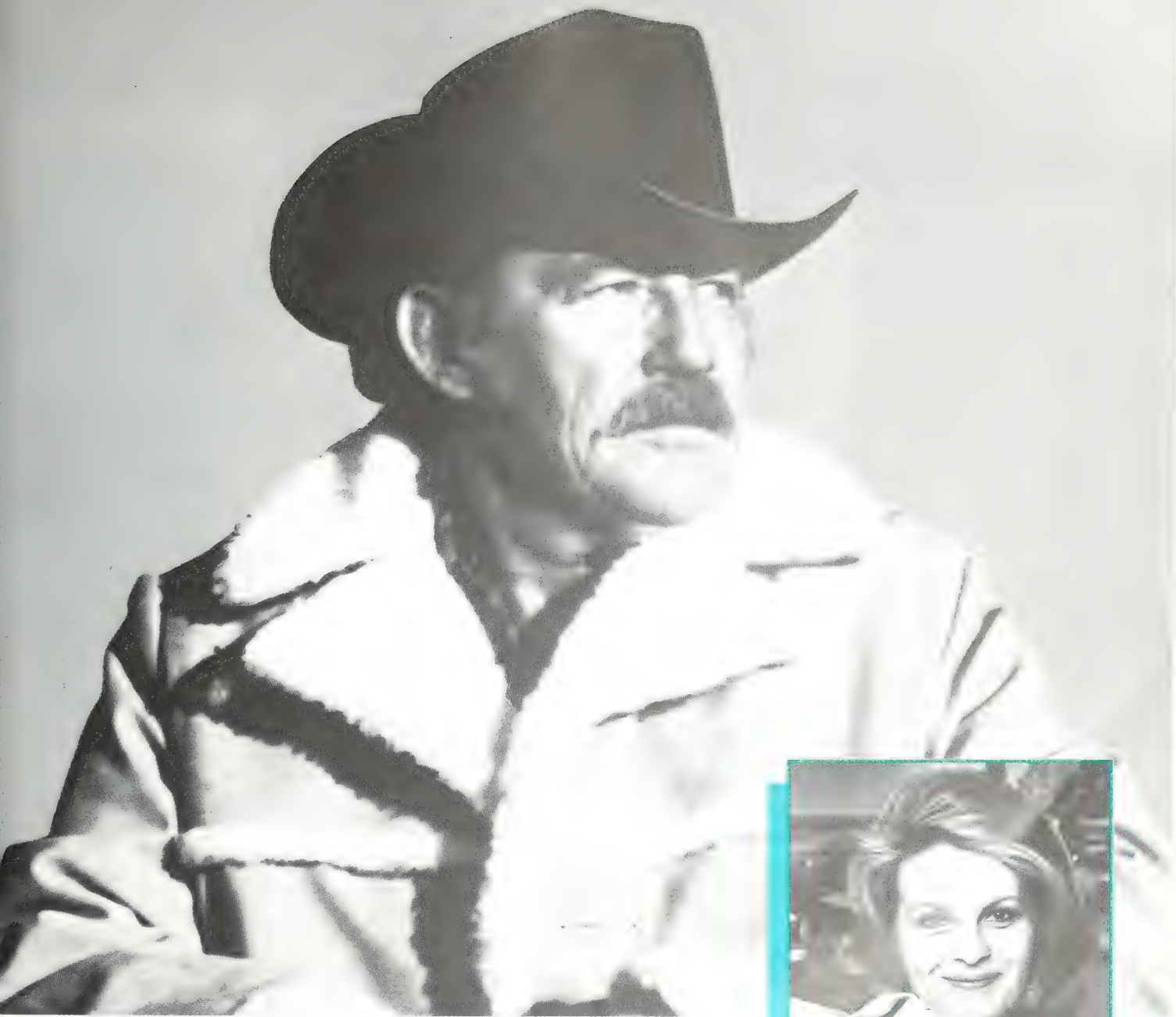
News of what is new in the medical supply industry is composed of abstracts from news releases. Each item published does not necessarily constitute an endorsement of a product or recommendation for its use by INDIANA MEDICINE or by the Indiana State Medical Association.

may be used to test for active herpes 1 and 2 from genital, anal or external nongenital samples. Test results are available in 12 minutes and are displayed in an easy-to-see pattern that double-checks the reagents and the test procedure to ensure accuracy.

Inventive Products, Inc., has announced the Sensor Pad, a device that increases the sense of touch. The pad makes breast self-examination easier, more comfortable and thorough. The 9-inch latex pad contains a small amount of medical grade lubricant to eliminate friction and other unwanted sensations. Clinical studies have shown the use of this pad can increase the percentage of women performing breast self-examination.

Wampole Laboratories has announced a Lyme (*B. burgdorferi*) IgM immunofluorescent assay. The test is available for research use only and complements the company's existing IFA test, which is designed to simultaneously detect IgG and IgM antibodies. Lyme disease has been reported in almost every state in the United States. In certain areas of the country, the disease is nearing epidemic proportions. Consequently, the demand for rapid and early diagnosis is increasing.

United Pacific Industries has produced the ULTRA SHIELD line of latex and vinyl examination gloves as a result of combining a new factory with the latest manufacturing techniques. Flaws and defects, such as pinholes, tearing and streaking, virtually have been eliminated. The gloves are available in small, medium and large sizes in latex, vinyl and powder-free forms. □



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cme calendar

Methodist Hospital

Methodist Hospital will sponsor the following continuing medical education events in June, August and September:

June 11-17- Mini-Fellowship in Management of Diabetes, Camp John Warvel, Nashville, Ind. This program also will be held June 18 to 24 and June 24 to July 1.

June 29-30- 15th Annual Wishard Lecture, Methodist Hospital, Indianapolis.

Aug. 18-20- Immunologic Obstetrics Symposium, Methodist Hospital Auditorium, Indianapolis.

Sept. 8-9 - Advanced Trauma Life Support, Methodist Hospital Wile Hall, Indianapolis.

For more information, call Dixie Estridge, CME coordinator, Methodist Hospital of Indiana, at (317) 929-3733.

Indiana University

The Indiana University School of Medicine will sponsor the following continuing medical education courses for July and August:

July 10-19 - 74th Annual Anatomy and Histopathology of the Head and Neck and Temporal Bone, Indiana University Medical Center, Indianapolis.

July 21-22 - HIV Infection in Primary Medical Practice, University Place Executive Conference Center and Hotel, Indianapolis, (see page 463 for more information).

Aug. 11-12- Surgical Oncology

Meeting, University Place Executive Conference Center and Hotel, Indianapolis.

For information, call Melody Dian, assistant director, Continuing Medical Education, (317) 274-8353.

The Cape Cod Institute

The Cape Cod Institute will celebrate its 10th anniversary this year. The Tenth Cape Cod Institute will consist of 20 week-long courses starting June 26 and ending Sept. 1.

Some topics to be discussed include neuropsychology, psychotherapy, childhood psychopathology, clinical hypnosis and marital therapy. Tuition is \$370 for the first program and \$225 for each additional program.

To obtain a catalog listing of the programs, contact the Cape Cod Institute, Albert Einstein College of Medicine, 1303 Belfer Building, Bronx, NY 10461 - (212) 430-2307.

University of Michigan

The University of Michigan will present the 15th Annual Mackinac Island Course, "Advances in the Management of Infectious Diseases," at the Grand Hotel Aug. 25 through 28.

The fee for the course, which is sponsored by the university's Division of Infectious Diseases and Department of Internal Medicine, is \$260. The fee for attending just one day of the program is \$110.

For a program brochure, contact Pattie Goble, registrar, Office of CME, Towsley Center, Box 0201, University of Michigan Medical School, Ann Arbor, MI 48109-0201, or call 1-800-962-3555.

Washington University

The Washington University School of Medicine will present a

"Symposium on Asthma" in St. Louis July 20.

The program chairman will be Phillip E. Korenblat, M.D. Participants will receive 8.5 hours of AMA Category I CME credit. For more information, contact Cathy Caruso, 660 S. Euclid, St. Louis, MO 63110 - 1-800-325-9862.

Berkshire Conference

The Fifth Annual Berkshire Medical Conference will be held throughout July at the Country Inn and Conference Center at Jiminy Peak in Hancock, Mass.

"Advances in Cardiology" will be the subject of the first conference July 13 through 15. "Special Challenges in General Medicine" will be the topic of the second conference July 20 through 22.

For more information, contact the Area Health Education Center, 725 North St., Pittsfield, MA 01201 - (413) 447-2417.

Menninger Foundation

The Menninger Foundation will sponsor a workshop for physicians and their spouses July 23 through 28. This workshop will focus on balancing commitments to family and profession. Physicians and spouses are expected to participate. The reservation deadline is June 23. For information, call the registrar at (303) 349-7561.

American Cancer Society

The National Conference on Breast Cancer will be conducted by the American Cancer Society July 19 through 21 at the Westin Hotel in Chicago. The registration fee for physicians is \$200, if postmarked by the June 28 deadline. The fee is \$250 after June 28. For more information, write the National Conference on Breast Cancer, 1599 Clifton Road, N.E., Atlanta, GA 30329. ▀

**The Indiana University School of Dentistry
Invites You to Attend a Seminar:**

**I.U. School of Dentistry
TMJ Disorders Seminar**

September 29, 1989

**at the
University Place Conference Center
Indiana University-Purdue University
at Indianapolis**

Faculty members representing the IU dental school's departments of Dental Diagnostic Sciences and Oral and Maxillofacial Surgery will host a one-day seminar and discussion of disorders of the temporomandibular joint and how these disorders relate to other types of orofacial pain. The course outlines the clinical signs and symptoms of myofascial pain dysfunction and disc displacement problems, as well as the supporting radiographic features and therapeutic modalities used in treatment.

Course Outline

Morning Session

- Differential Diagnosis of Orofacial Pain vs "TMJ" Pain
- MPD (Myofascial pain dysfunction) Explained
- Radiographic Interpretation of TMJ Disorders

Afternoon Session

- Conservative Treatment Modalities (Pharmacotherapy, physiotherapy...)
- Arthroscopy Treatment of the TMJ

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Graduate Program, Dental
Diagnostic Sciences

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Associate Professor of
Oral and Maxillofacial Surgery
(School of Dentistry), and
Plastic Surgery (School of Medicine)

Joseph Heidelberg, DDS
Assistant Professor
Oral and Maxillofacial Surgery

Cost

\$95 (includes coffee breaks and luncheon)

For Information Call:

**Dr. Donald Arens
IUSD Director of Continuing Education
(317)274-7782**

The myth of stone

Lithotomy history and the Hippocratic Oath

J. Vincent Thomalla, M.D.
Indianapolis

"I will not cut, indeed not even sufferers from stone, and I will keep apart from men engaging in this practice."

For centuries, this quote from the Hippocratic Oath has served as a source of confusion concerning the primitive practice of lithotomy and the origins of its modern counterpart, urology. In this injunction, the practice of lithotomy is apparently banned and those engaging in it are debarred from the rest of the medical community. However, certain evidence suggests this may not be an accurate assessment of what Hippocrates intended.

The term lithotomy was coined in approximately 276 B.C. by Ammonious of Alexandria, a prominent Greek stone surgeon. The term was created to describe his method of bladder calculus extraction in which he actually cut the stone (lithotomus) in order to break it, which aided in removal.¹

Stone removal, however, likely had been practiced long before the inception of its official name. There are numerous references and descriptions of calculus disease throughout the ancient medical texts of the Egyptians, Persians, Hindus, Greeks and Chinese.^{1,6} The first concise descrip-

tion of the procedure of lithotomy is attributed to a Roman, Celsus (25 B.C. to 25 A.D.). His famous description served as the basis for the practice of lithotomy until the 15th century:

"The surgeon, whose nails should be carefully pared, dips the index and middle fingers of the left hand in oil and introduces them gently into the anus ... He presses the fingers of the right hand on the lower abdomen ... The stone must be sought near the neck of the bladder ... If it is not at the bladder neck or if it is situated further back, the fingers must be passed more deeply into the anus ... To this purpose, one must push forwards with the fingers of the left hand whilst the right hand, placed on the abdomen, prevents it from falling back, until it reaches the bladder neck. Once the stone is engaged, an incision is made in the skin over the bladder, near the anus, down to the bladder neck ... Then in the deepest and most narrow part of this incision a second transverse incision is made, opening the bladder neck so that a hole allowing urine to escape is made and the hole is larger than the stone."¹⁷

Although Celsus recommended this procedure be performed on adolescents between the ages of 9 and 14, it is likely that since little else could be offered to older individuals, this procedure also was applied to them with a higher

incidence of morbidity and mortality. This somewhat reckless procedure had a number of inherent complications, the possibilities including hemorrhage, infection, fistula formation, testicular and scrotal necrosis and death.

Despite this apparent ban, Greek physicians were familiar with the procedure because Celsus drew the basis of his famous description from the Greeks. Evidently, Hippocrates was familiar with the procedure because he is attributed with writing about one of the most distressing situations in surgery – "introducing a catheter, not to be able to reach the bladder, or reaching it, not to be able to locate the stone."⁷

The apparatus minor, as Celsus' procedure was to become known, surfaced in all the major cradles of civilization. The Sushruta Samhita of Hindu medicine contains a very precise description of simple lithotomy strikingly similar to that of Celsus.² Galen (131 to 200 A.D.) practiced lithotomy according to the technique of his Roman colleague and was instrumental in its advancements. The apparatus minor also was practiced in Persia and Turkey according to the description of Celsus.

The Arabians held steadfastly to the teachings of Galen, Celsus and Hippocrates. Abou Bahr Mohamed ibn Zakareya al Razy (850 to 924) described perineal lithotomy in great detail. Abu al



Figure 1: The lithotomy position. (Originally appeared in Tolet, F: *Trait de la Lithotomie*. 4th ed., Paris, 1689. From Herman JB: *Urology: A View Through the Retrospectroscope*. Harper & Row, Hagerstown, Md., 1973.) Reprinted with permission.

Kasem Khalafal-Zahra Wy (Abulcasis, 936 to 1013) specifically addressed the subject of lithotomy in women and taught midwives how to perform the procedure because as a man he was forbidden to do so. The procedure in women was accomplished by making an incision in the vagina and extending from there into the bladder neck, thus creating a vesicovaginal fistula for extraction of the bladder calculus.⁸

The Celsian technique was taught at the new European medical centers of Salerno, Milan,



Figure 2: Cutting for the stone. (Originally appeared in Tolet, F: *Trait de la Lithotomie*. 4th ed., Paris, 1689. From Herman JB: *Urology: A View Through the Retrospectroscope*. Harper & Row, Hagerstown, Md., 1973.) Reprinted with permission.

Montpellier, Bologna and Paris. However, the actual practice of lithotomy was shunned by most physicians of the pre-Renaissance period. The reason for this may have been two-fold. First, many of the European medical schools were formed within monasteries, and it was during this time that the concept of "Ecclesia abhorret a sanguine" became entrenched. Thus, many of the religious orders providing medical care separated surgical therapy from medical, relegating surgery to others less well-trained.⁹

Secondly, because of the complications frequently encountered with lithotomy, the school of

thought among physicians was to allow the untrained to perform the procedure and ignore treating surgically correctable calculus disease in their own practices. No effort was made to investigate alternative or more anatomically correct means of surgical treatment. Thus, the practice of lithotomy became the stronghold of the itinerant lithotomists, who traveled from town to town removing as many stones as possible before the complications they induced forced them to move on.

Thus, the teachings of Hippocrates, erroneous or not, became steadfastly entrenched, and the idea of the Hippocratic ban on lithotomy proliferated. To enter the bladder was a mortal wound; to cut for stone was forbidden by true physicians. This left innocent victims of vesical stone to be butchered by incompetents.

The wave of reform ushered in by the Renaissance, however, brought changes in the practice of lithotomy. For the first time in nearly 15 centuries, a significant change was made in the technique of Celsus. Devised by Giovanni de Romanis of Cremona around 1520 and published by his devoted follower Marianus Sanctus de Barletta in 1522, the Marian operation, or apparatus major, became the procedure of choice for practicing lithotomists.

The actual dissection process essentially was unchanged from the dissection process of the apparatus minor; however, the lithotomist now was capable of being sure his incision would enter the bladder neck. This was made possible by passing a grooved staff through the urethra into the bladder. The usual perineal incision was made down to the region of the bladder neck. The grooved staff then was used to

guide the subsequent succession of instruments into the bladder neck for the ultimate stone extraction. The name "apparatus major" derived from the large number of instruments that were used in the course of cutting, dilation and extraction^{2,10} (Figures 1, 2 and 3).

The method spread rapidly and became the standard procedure for lithotomy. The practice of lithotomy was revived during this time and became an accepted treatment method. This new acceptance most likely stemmed from the rejuvenation of medical science as a whole, with the accompanying denunciation of earlier inaccurate and confusing dogma. The practice flourished in Europe, with numerous lithotomists making their own peculiar changes in the instruments used with virtually no changes being made in the actual procedure.

In the late 17th century, a new

form of lithotomy was developed, known historically as lateral lithotomy. A number of individuals were responsible, and because of their independent discoveries, there was much bickering and professional jealousy among them.

Jacques de Beaulieu (Frere Jacques) and Johannas Rau were primarily responsible for the development of lateral lithotomy. This procedure consisted of an incision on the left side of the perineum medial to the ischial tuberosity. A diagonal incision was made in such a manner so as to come into contact with a sound that previously had been placed into the bladder via the urethra. The incision was made to pass between the ischiocavernosus and bulbocavernosus muscles and through the ischiorectal fossa. The prostate was engaged, and the sound then was used as a guide for the incision to be carried into the bladder neck. This re-

sulted in a much cleaner and less destructive path into the bladder neck than with previous techniques.

The techniques of Frere Jacques and Rau might have passed into obscurity had it not been for the curiosity and intellectual capabilities of William Cheselden, an Englishman (Figure 4). Cheselden made his first contribution to medicine with the publication of *Anatomy of the Human Body* in 1713. He apparently became intrigued with the success Rau had demonstrated with his surgical techniques and set out to discover why it was an anatomically sound procedure.

Cheselden's first lithotomies most likely were performed using the apparatus major. In 1722, he experimented with the procedure of suprapubic cystotomy for the removal of bladder calculi. This procedure (haut appareil) originally was performed in 1556 by Pierre Franco on a child in whom he could not extract the bladder stone by the conventional method and resorted to the suprapubic route in a moment of desperation. John Douglas had performed the first planned suprapubic lithotomy in 1719, and it was from him that William Cheselden apparently patterned his technique.

Cheselden experimented with the haut appareil for many years and published his findings in 1723. However, lack of anesthesia, problems of muscle relaxation and pain made the suprapubic method less than ideal. In his search for a more ideal lithotomy procedure, Cheselden returned to the technique of Frere Jacques and Rau: lateral lithotomy. This method had been successful for them, yet little was known of the exact operative technique because

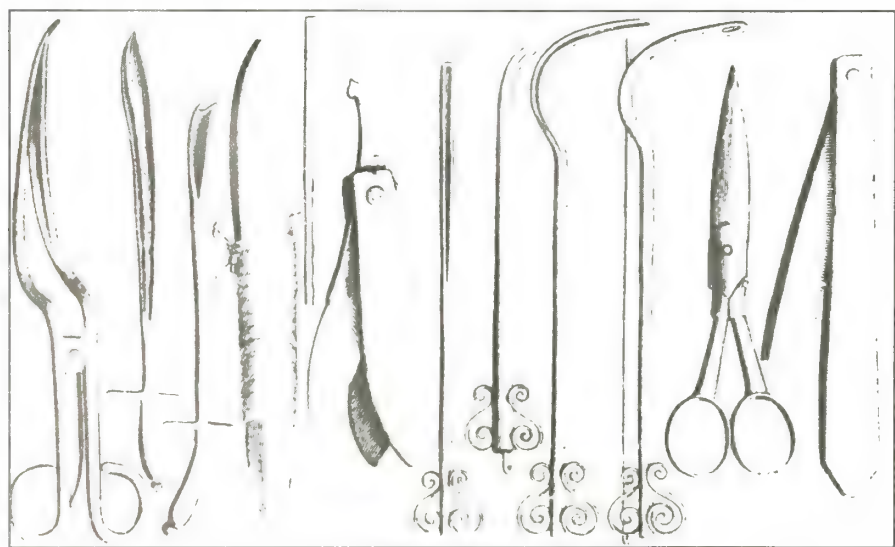


Figure 3: The lithotomist's tools. (Originally appeared in Tolet, F: *Trait de la Lithotomie*. 4th ed., Paris, 1689. From Herman JB: *Urology: A View Through the Retrospectroscope*. Harper & Row, Hagerstown, Md., 1973.) Reprinted with permission.

neither had described their method in adequate detail.

Through dissection, Cheselden experimented with various surgical approaches and discovered that by cutting on a grooved staff the prostatic and bulbous urethra could be incised directly without extending into the bladder itself, thus preventing the troublesome complications of tearing through the bladder wall. In his final refinement of the technique, Cheselden made the incision into the urethra, beginning at the level of the prostate and extending it toward himself, thus preventing blind incisions toward the bladder and the bowel. Because no gaping holes were made in the bladder wall itself, and hemorrhage was kept to a minimum through the use of ligatures, Cheselden experienced highly significant reductions in morbidity and mortality^{1,10} (Figure 5).

With the aid of John Douglas, the Cheselden approach was widely published and spread rapidly throughout Europe. In a few years, the Cheselden approach became the procedure of choice for lithotomy and remained for 150 years. Lithotomy was no longer a horrifying procedure, and self-inflicted lithotomy became a procedure of the past.^{11,12} Prominent, poor and middle-class citizens underwent lithotomy by experienced and well-trained surgeons. U.S. Supreme Court Chief Justice John Marshall underwent lateral lithotomy in 1831 in Philadelphia, a testament to the widespread acceptance of the procedure.¹³

The practice of lateral lithotomy reached its zenith with the formation of the Norfolk and Norwich Hospital and subsequently the Norwich School of Lithotomy in

Norfolk County, England, in 1772. With the admission of the first patients in July 1772, a detailed registry was begun and continued for 139 years. From 1772 to 1909, the surgeons at the Norwich School of Lithotomy performed 1,488 stone procedures with the vast majority being the procedure of lateral lithotomy.¹⁴

***However,
the greatest blow
to the practice of
lithotomy was the
virtual disappearance
of vesical calculi in
the early 20th
century.***

The practice of lithotomy began to wane in the late 19th century for several reasons. At the beginning of the 19th century, lithotrity became a viable alternative to lithotomy. By the mid-19th century, lithotrity was a commonly practiced procedure attributable to the efforts of several individuals, the most notable being Gruit-huisen, Leroy, Civiale and Heurte-loup.¹⁵ The practice was despised by lithotomists but was used extensively by its proponents, especially for the extraction of small stones. Lithotomy was reserved for the extraction of larger stones.

Anesthesia facilitated the development of still more alternatives to lithotomy. However, the greatest blow to the practice of lithotomy was the virtual disappearance of vesical calculi in the early 20th century. Improved diet and healthier living conditions made

the greatest contributions toward the disappearance of vesical calculi and the practice of lithotomy.

Discussion

The Hippocratic Oath has served as the cornerstone of physician ethics for centuries. To this day, the Hippocratic Oath is taken in some form or another by those who receive medical degrees. Today, it primarily serves as a reminder of the noble and altruistic ideals of the ancient physicians and as an encouragement to carry on in this fine tradition. However, for centuries the word of Hippocrates was law, governing the activities of the practitioners of the healing arts. Even though the teachings of Hippocrates served as guidelines for physicians, they also may have served as an impediment to the growth of medicine.

For centuries, teachings not from Hippocrates or restatement of Hippocratic dogma were considered to be unfounded or blasphemous. As such, Hippocratic medicine was the standard by which all other discoveries or ideas in medical science were judged. As late as the early 1300s, Henri de Mondeville described the right kidney as being situated higher than the left, despite his own anatomic dissections.¹

Lithotomy also was subject to the ancient but prevailing medical fallacies. It is difficult to say when lithotomy first became banned by the medical profession as a procedure contrary to Hippocratic teachings. The Greeks were responsible for the widespread use of the procedure, and Hippocrates appears to have been familiar with it. When was the Hippocratic Oath then construed to obviate the practice of lithotomy?



Figure 4: William Cheselden (1688-1752). (Engraving by Tardieu from painting by J. Richardson. From Murphy LJT: *The History of Urology*, 1st ed., 1972, Charles C. Thomas Publishers, Springfield, Ill.) Reprinted with permission.

Historically, the ban appears to have been most widespread during the Middle Ages. As previously mentioned, religious interference and numerous complications resulted in the procedure being cast into the jurisdiction of the unqualified barber or itinerant stone surgeon because the procedure was banned in the Hippocratic Oath and, as such, should not be in a physician's armamentarium. It gave the physicians of the era an easy scapegoat because they could point to the surgeons' poor results and say the procedure had been banned by Hippocrates and those undergoing the procedure did so at their own risk. Thus, because of the lack of integrity among the physicians of that time, the procedure of

lithotomy was relegated to those who had the least experience and education, and the patients suffered the consequences.

Often, translation has served as a barrier in the passage of knowledge from generation to generation and between civilizations. This barrier has been a problem that continues to plague historians in all areas of research. This idea was suggested by Nittis in 1939 in an article in which he explored the specific ban on lithotomy in the Hippocratic Oath. He believed there were several ways in which the original Greek version could be translated. Nittis contended that the phrase "to cut" and "to castrate" were synonymous in the Greek language, and that in essence, Hippocrates was banning the practice of castration not lithotomy.⁷ Castration was strongly opposed in the Greek culture, unlike the Roman culture where it flourished. Nittis suggested that Hippocrates was referring to castration as a facilitory procedure to lithotomy, where the genitals might be removed in an attempt to extract a large vesicle stone.

The possibility also exists that this translation referred to abstaining from performing lithotomy on those in whom castration might result as a complication of the primary procedure. It is not known how often testicular or scrotal necrosis was encountered as a complication of lithotomy, but it is not difficult to imagine the blood supply to the external genitalia becoming compromised either by direct surgical manipulation or by the ravages of an unabated perineal infection, both known complications of lithotomy.

However, Edelstein in his com-

prehensive interpretation of the Hippocratic Oath, dismisses Nittis' contention ... "to reject castration on moral grounds and yet leave it to others would be like compounding a felony if not something worse." Edelstein argues that the Hippocratic Oath is not even a document of Hippocrates but rather an ethical code possibly written in tribute to Hippocrates by a physician or group of physicians who held steadfastly to the philosophical school of Pythagorean thought.¹⁶

Edelstein contends that the profound Pythagorean influence demonstrated throughout the oath explains many of the concepts expressed. Specifically, in reference to the ban on lithotomy, if written by a follower of Pythagorean logic, this would be extended to a complete separation of medi-



Figure 5: The anatomy of lateral lithotomy. (Originally appeared in Douglas, J: *The History of the Lateral Operation*. Appendix, London, 1731. From Riches E: *The history of lithotomy and lithotripsy*. *Annals of the Royal College of Surgeons of England*, 43:185-198, 1968.) Reprinted with permission.

cine and surgery. In this light, the oath is understood easily; it is a statement of conduct for physicians, exclusive of surgeons pre-dating the same separation seen in pre-Renaissance Europe. The idea that Hippocrates did not actually write the oath would be based on this separation of surgery and medicine, as many other writings attributed to Hippocrates dealt specifically with surgical intervention.

Why has the oath become such an important document concerning the ethical conduct of physicians since the end of antiquity?

Edelstein writes that, because of the oath's idealistic views and provisions of conduct, it had common ties to the fundamental beliefs of the religions that have been predominant since antiquity—Christianity, Judaism and Mohammedanism. Because of this, the oath was easily embraced by followers of these religions and subsequently evolved into a nucleus of medical ethics.

The supposed Hippocratic ban of lithotomy has more meaning now than at any other time in history with the advent of percutaneous techniques for calculus extraction and extracorporeal shock wave lithotripsy. With this new technology, the vast majority of stones can now be treated without "cutting the stone." Again, the oath is left open for interpretation based primarily on technologic advances of the time. Taken in the context of current technology, the Hippocratic ban on lithotomy would seem appropriate

historically.

Conclusion

From the historical progression of the practice of lithotomy, it is evident that despite the ban expressed in the oath, the need of sufferers from stone resulted in surgical intervention. What was intended in the Hippocratic Oath will remain open to debate. However, the Greeks obviously were familiar with the procedure, as was Hippocrates, and it was from the Greeks that the procedure spread to other cultures by the Greek-trained physician Celsus.

The ban apparently had its greatest proliferation during the Middle Ages. The reason for this is unclear but seems to be rooted in the importance of the Hippocratic Oath during that time. This idealistic code of ethics, which had common ties with the major religions of the day, resulted in people viewing surgery as little more than pagan ritual.

With the dawn of the Renaissance, the medical sciences were rejuvenated with a wave of progressive thought. The practice of lithotomy benefited directly while many became active in the definition of the proper technique. It became an accepted procedure of the time and a prototype for many of the urologic procedures performed today. □

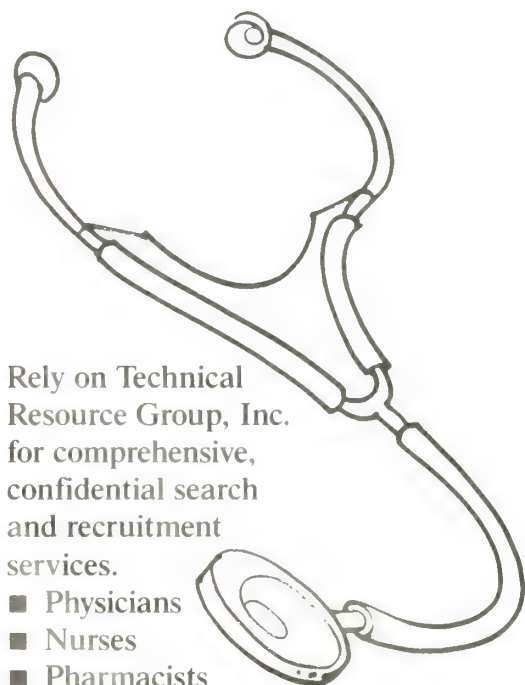
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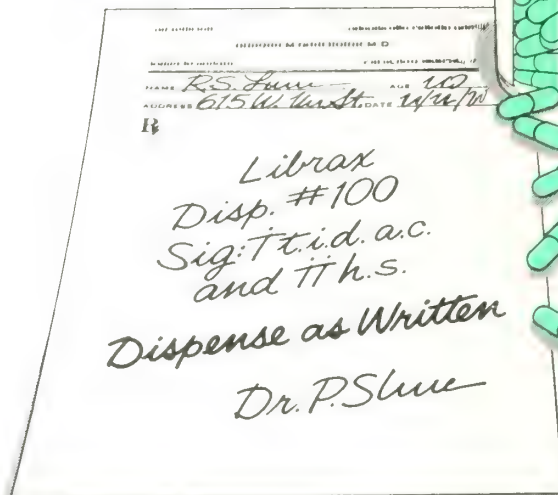
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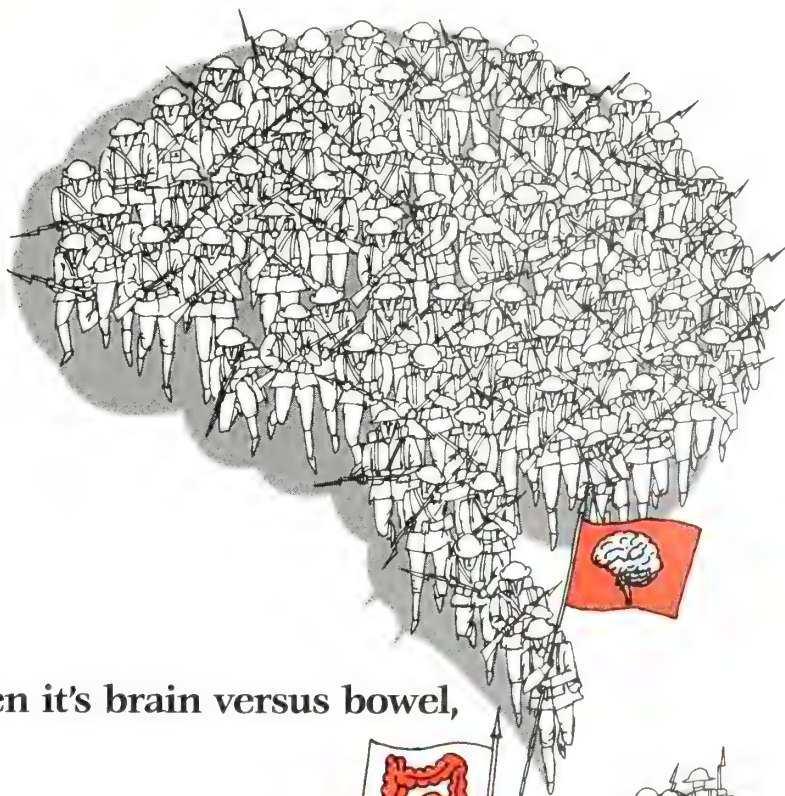


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Stone babies still occur

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In 1721, 46 years before her death, Anna Mullern declared herself pregnant, but the swelling remained until she died at age 94. Mullern wanted her body opened after death so a surgeon broke open the mass with a hatchet. Inside Mullern's body was a lithopedion.

One of the earliest recorded cases of lithopedion occurred 1,000 years ago. "The mother passed fetal bones through the abdominal wall but recovered."¹

A lithopedion is an extrauterine fetus that has expired and become calcified. It is a rare finding, having been reported in less than 300 cases internationally by 1980.²

Case report

A 30-year-old Miskito Indian Nicaraguan refugee was evaluated in the Moravian Clinic in Ahuas, Honduras, in November 1986. She was referred to the clinic because of a painless pelvic mass. Thirteen months earlier, she had given birth to her fifth child without complications. She subsequently was amenorrheic, presumably related to breast-feeding. Three years before referral, she had experienced abdominal pelvic pain for approximately three months, but she remained asymptomatic. Examination confirmed

the presence of an irregular, hard pelvic mass suggestive of calcified fibroids. A urine pregnancy test was negative. The kidney, ureter and bladder (KUB) film demonstrated evidence of a nonviable calcified fetus, consistent with a lithopedion.

A laparotomy was advised. Having only five children, the patient was concerned infertility might result from the surgery. Among Miskito Indian couples, 10 to 12 children are not unusual. Assurance was given that fertility would be maintained if possible, and she consented to the procedure.

A laparotomy was performed under spinal anesthesia. Immediately after entering the abdomen, a hard mass was palpated in the right upper quadrant beneath the liver. No pelvic mass was present. Being completely free of adhesions, the mobile lithopedion had moved up in the abdomen, presumably while the patient was in a Trendelenburg position for her spinal anesthesia.

The lithopedion was delivered easily. The placenta and umbilical cord were absent. A scar was noted in the midsection of the right fallopian tube. A right salpingectomy was performed to reduce the risk of a future tubal pregnancy. Her postoperative course was uneventful.

An x-ray of the lithopedion revealed a well-developed skeleton. The femur length was 50 mm, suggestive of a 25 week gestational age. Histologic study revealed the scar in the fallopian

tube to a cicatrix with osseous metaplasia consistent with a previously ruptured tubal pregnancy.

Comment

The criteria for lithopedion formation as delineated by Odel *et al* are: 1) there must be an extrauterine pregnancy; 2) the fetus must survive more than three months; 3) the pregnancy must escape medical detection; 4) the fetus must be sterile; and 5) conditions necessary for calcium deposition must be present.³

A lithopedion can originate from a primary abdominal pregnancy (conception occurring on the peritoneum) or from a secondary abdominal pregnancy, i.e., a tubal pregnancy with rupture, an ovarian pregnancy or an intrauterine pregnancy with uterine rupture.⁴ To be considered a primary abdominal pregnancy, there must be no evidence of recent or remote injury of the tubes and ovaries.⁵

The history of pain three years earlier and the scarred right fallopian tube suggest that this was a secondary abdominal pregnancy resulting from a ruptured tubal pregnancy. Abdominal pregnancies make up only 1% of extrauterine pregnancies. Ninety-eight percent of extrauterine pregnancies are intratubal, 1% are ovarian and 1% are primary or secondary peritoneal implants.⁶ There are about 11 abdominal pregnancies per 100,000 births and nine abdominal pregnancies per 1,000 ectopic gestations in the United States.⁷ From 1937 to 1977, 11 abdominal pregnancies out of



Lithopedion and right fallopian tube with small scar in middle.

87,239 babies were recorded at Indiana University Medical Center with an incidence of 1:7,931.⁸

The sequence of events in this case probably was as follows: The patient experienced a right tubal pregnancy. When the tube ruptured, the fetus was expelled into the abdominal cavity where it continued to grow to about 25 weeks' gestation. Then, it died from placental insufficiency. During the next several years, a lithopedion developed as a result of aseptic calcification.⁹ The placenta and cord slowly resorbed. She had a normal intrauterine pregnancy with a normal vaginal delivery while the lithopedion and part of the resorbing placenta remained in situ. Thirteen months later, she was referred to the Ahuas Clinic with a pelvic mass.

Belfar *et al* followed a patient with serial ultrasound studies for five and a half years after delivery

of an abdominal fetus. They noted an initial increase in size of the retained placenta for two months followed by a decrease to one-third of initial size 10 months postpartum. Further absorption then occurred with a small persistent area identifiable at five and a half years.¹⁰

This case is distinctive, although not unique, in that the history suggests a normal intrauterine pregnancy and vaginal delivery occurred while the lithopedion remained in the abdomen. □

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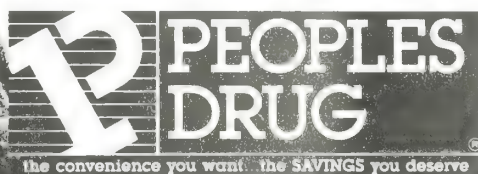
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Antitumor, nerve blocks and neuroablative therapies for cancer pain

Wayne O. Evans, Ph.D.
Indianapolis

Editor's note: This is the fifth in a series of six articles on cancer pain.

Chemotherapy can be used to reduce pain in cancer patients. Its utility comes from the reduction in mass of a drug responsive tumor. In this sense, it is not "analgesic" therapy. Pain from already damaged structures will not be affected. Furthermore, the severity of the side effects of chemotherapeutic agents may limit their use.¹

Radiation has long been known to be palliative for cancer pain.² In primary treatment, it may reduce tumor mass and retard infiltration of nerves. It may be used at lower doses for pain reduction. It often produces excellent results in meningeal carcinomas, epidural metastases, tumors of capular tissues (liver, spleen), multiple bone metastases and various localized pain areas.

Percutaneous irradiation, radionuclide therapy and radioressection of the pituitary may be used. Complete relief or mitigation of pain may result in 60% to 80% of cases, with the reduced pain period lasting two to 36 months.³

Nerve blocks

Appropriate selection of patients is vitally important in the use of nerve blocks. Generally, these approaches will be used for patients whose pain cannot be managed by other means or who are extremely ill and poor candidates for surgery. Patients with localized pain not associated with the central neural axis usually are good candidates. The presence of active infection at the site of the block or anticoagulant therapy are contraindications. The following considerations are taken directly from Ferrer-Brechner:⁴

1) A decreased platelet count ($< 100,000/\text{cu mm}$) contraindicates the use of nerve block since the needle insertion might provoke an inordinate amount of bleeding and hematoma;

2) The cancer patients, because of decreased oral intake due to nausea and anorexia, may have a decreased circulating volume so he or she is subject to hypotension following a sympathetic block;

3) Tumor invasion may distort or "sheath" the nociceptive pathway to be blocked. This nerve root incasement may be secondary to radiation or previous nerve block causing arachnoiditis;

4) Compromised pulmonary function after a thoracic epidural

block, especially in patients with primary or metastatic lung disease, may deteriorate further, resulting in loss of intercostal muscle function. Arterial blood gases must be measured before and after a diagnostic epidural block;

5) Since most cancer patients are already receiving potent narcotics when they become candidates for neural blockade, a successful block with phenol or alcohol should not mean abrupt cessation of the patient's narcotic analgesics. To prevent physical withdrawal, a systematic withdrawal regimen should be planned.

Appropriate education of the patient and the family is important because complications such as incontinence, numbness, paresis or paresthesias may develop.

A local anesthetic may be applied through an epidural catheter to the spinal cord to provide a limited period of time in which the patient can be free from pain. It can be used to provide instant relief while longer acting methods of pain relief such as radiotherapy or neurosurgery are being attempted. It also can be useful to provide pain relief in the last few days of the patient's life.⁴ If myofascial pain disorder has developed with accompanying trig-

ger points, the injection of small volumes of dilute solutions of local anesthetics may be directly infiltrated into the trigger points.⁵ In conditions with painful muscle spasms, even if no trigger points are involved, a local anesthetic may be infiltrated into the spastic muscle. Generally, in this application, hyaluronidase is added to the local anesthetic to provide better spreading of the solution.

Local anesthetic agents also are used to perform diagnostic blocks before chemical neurolysis. A diagnostic block is mandatory before the use of a more permanent block. A block can provide information on the segmental distribution of pain and differentiate central versus peripheral pain. It also can define the role of somatic, autonomic and musculoskeletal components of the pain. If a diagnostic block yields at least a 75% decrease in pain and the patient can accept the numbness and possible motor loss, then a more permanent block may be appropriate.⁴ The precision of needle placement is of great importance in obtaining a successful diagnostic block. Needle location always should be confirmed by fluoroscopy.

Chemical neurolysis may be accomplished with intrathecal injections of alcohol or phenol. The success rate for this type of pain intervention varies between 46% and 63%, depending on the particular procedure.⁶ For patients with pancreatic carcinoma or retroperitoneal metastases, a 94% success rate has been reported.⁷ Stellate ganglion blocks have had success in patients suffering intractable limb pain associ-

ated with autonomic dysfunction in patients with lung cancer.⁸ Nerve blocks in the intercostal area have been extremely successful for pain associated with liver metastases.⁹

Complications can develop from the use of neurolytic blocks.⁴ Motor pareses can occur if a ventral root is unintentionally hit. Also, respiration may be affected by complete blocking of a dorsal root or ventral roots of several thoracic segments. Patients with ventilatory obstruction should not be given thoracic blocks. Bladder dysfunction is seen after intrathe-

The most advanced technique in neurolytic blocking has been the ablation of the pituitary using a stereotactic approach.

cal blocks of the sacral segments in 50% of the cases. This may last from days to weeks. Complications from neurolysis of sympathetic ganglia are less prevalent than with intrathecal injections. However, neuritis, pneumothorax and hypotension may occur.

The most advanced technique in neurolytic blocking has been the ablation of the pituitary using a stereotactic approach. Levin, Katz and their coworkers used this approach in 29 patients with either a prostatic cancer or widely metastasized disease.^{10,11} Of the 17 patients with prostatic cancer, 94% obtained good to excellent pain relief. Of the remaining 12 patients with mixed tumors, 11 had good to excellent pain relief.

A neurolytic injection of the trigeminal nerve and/or the gasserian ganglion is a method that can be used for patients with inoperable cancer pain in the face.¹²

It is simple and quick, and the pain relief usually lasts six months. The procedure can be easily repeated. Complications from this procedure include anesthesia dolorosa and loss of motor activities.

Neuroablative approaches

Neuroablatives should be considered when cancer pain no longer responds to more conservative measures. Recent advances in the field have made it possible for most operations to be performed percutaneously without general anesthesia and loss of

blood, and with a short hospital stay.¹³ The major problem with these operations is the tendency for the pain to recur. Specific complications

also are associated with each of the neuroablative procedures.

Cordotomy is the oldest of the neurodestructive procedures used in cancer patients.¹⁴ A cordotomy may be performed unilaterally or bilaterally. Furthermore, a physician may perform either an open or a percutaneous cordotomy. The procedure is used most often for sharp, aching somatic pain. It is less appropriate for dysesthesias, post-herpetic neuralgias or deafferentation pain. It is limited in use for problems above the thoracic area because bilateral cordotomies of the cervical spine carry the risk of respiratory failure.

Unilateral cordotomies within the cervical area are possible. High cervical percutaneous cordotomy at C-1, C-2 is the method of choice for unilateral pain below C-5. All bilateral cordotomies can carry the risk of paralysis of the

sphincter. During the immediate postoperative period, disabling dysesthesias may occur in as many as 5% of the patients. Furthermore, a unilateral section may result in unmasking pain on the contralateral side.

Initially, pain relief is produced in between 70% to 90% of patients, but this number drops to 50% in six months, and, by one year, only 30% of patients will continue to experience relief.¹⁵ Temporary ipsilateral pareses and ataxia may be disabling temporarily. In fact, 15% of patients will experience this. Generally, permanent weakness occurs only in 5% of patients. Repeated cordotomies are possible for patients in whom pain does recur.

The goal of commissural myelotomy is the interruption of pain fibers as they cross in the anterior commissure of the spinal cord. This method may be useful in treating bilateral or midline cancer pain with a lower rate of complication than a bilateral cordotomy. The operation has an initial success rate of between 60% to 90% of patients.^{16,17} Complications include the development of transient but severe dysesthesias. Postoperative bladder dysfunction or motor weakness is uncommon. As with cordotomy, the pain tends to return in time.

Destructive lesions may be made in the dorsal root entry zone (DREZ) of the substantia gelatinosa. DREZ lesions have been useful particularly in deafferentation pain states, such as phantom, postherpetic and postradiation pain.¹⁸ Reports show between 50% to 75% of patients will experience complete relief.¹⁴ However, long-term studies have not yet proven how long the relief lasts.

Other neuroablative procedures

that require stereotactic approaches include medullary tractotomy, mesencephalotomy, thalamotomy, hypophysectomy and cingulumotomy.

A neuroaugmentive procedure for cancer pain relief is dorsal column stimulation. This is a simple technique in which percutaneous electrodes are introduced into the dorsal-epidural space of the vertebral canal. Its long-term results have been disappointing with cancer pain.¹³ Intracerebral stimulation includes stimulation of the sensory thalamic nuclei, the internal capsule, periventricular and periaqueductal gray. These are most useful for pain in the face and throat when other neurosurgical procedures have failed.^{19,20} □

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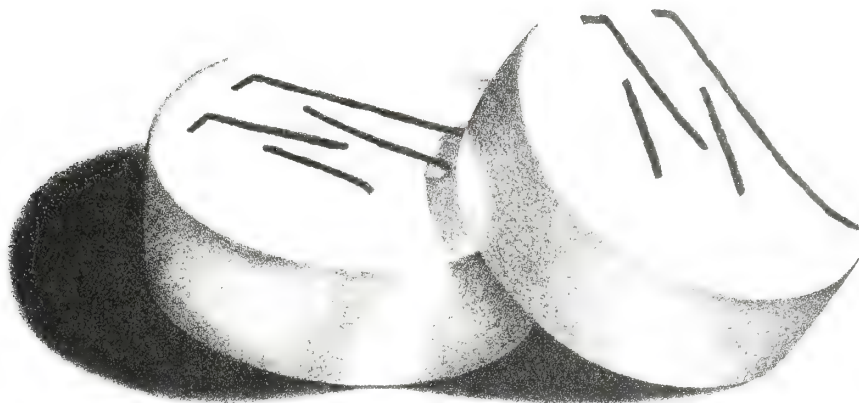
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Exacerbation of bleeding with renal insufficiency

Michael E. Pauszek, M.D.
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Acute gastrointestinal bleeding is a common reason for hospitalization. With acute hemorrhage, the incidence of a definable anatomic abnormality is high. Associated coagulopathy is unusual but must be identified. Laboratory tests including platelet count, protime and activated partial thromboplastin in time are performed regularly.

Renal insufficiency is associated with a prolongation in the bleeding time and a tendency for clinical bleeding. Multiple functional abnormalities of coagulation and hemostasis are associated with renal disease, including defective platelet aggregation to adenosine diphosphate, defective platelet adhesiveness to glass-bead columns, decreased availability of platelet factor 3 and increased prostacyclin from vessel walls.

Presented here is a case report of an elderly patient with an episode of upper gastrointestinal hemorrhage that responded well to the correction of her prolonged bleeding time with cryoprecipitate.

Case study

A 91-year-old woman went to the emergency room at Johnson County Memorial Hospital May 29, 1988, after vomiting a material like coffee grounds and an episode of unconsciousness. She had

a history of oral agent treated diabetes mellitus, degenerative joint disease, peptic ulcer disease and lifelong obesity. She had stopped taking a nonsteroidal anti-inflammatory agent more than 10 days before presentation, having noted no improvement in her long-standing joint pain.

Review of her old chart revealed a chronic elevation of her serum creatinine, 3.1 to 3.5 mg per deciliter (normal 0.5 mg to 1.4 mg per deciliter). She reported only an occasional ecchymosis associated with physical injury. There was no history of excessive bleeding or family history of bleeding diathesis.

Renal insufficiency is associated with a prolongation in the bleeding time and a tendency for clinical bleeding.

She was pale on examination. Her reclining heart rate was elevated to 124. Oral and pharyngeal examinations were unremarkable. No petechiae or ecchymoses were noted. On rectal exam, no masses were present, but the stool was melanotic. A nasogastric aspirant revealed material like coffee grounds.

Initial laboratory data included a hemoglobin of 9.2, platelet count 191,000, and protime and activated partial thromboplastin times were 14 and 17.7 seconds respectively. Her serum creatinine was elevated to 3.1 mg per deciliter.

The patient was treated with crystalloid. At the time of admission, a template bleeding time was performed using standard test procedure. The test was stopped at 15 minutes because of continued bleeding (normal 2.3 to 9.5 minutes). She was admitted, and a transfusion with packed cells was instituted. In addition, the patient received 10 units of cryoprecipitate.

A repeat template bleeding time performed immediately after completion of the cryoprecipitate infusion remained prolonged, and again, the test was stopped at 15 minutes for continued bleeding. Despite transfusion, her hemoglobin decreased to a minimum of 8.6 gm per deciliter. There were no further episodes of loss of consciousness.

The melena resolved 12 hours after admission, and the nasogastric was removed. The repeat template bleeding time at 19 hours after transfusion with cryoprecipitate had normalized to 4.5 minutes. An upper gastrointestinal series performed May 31, 1988, confirmed a duodenal ulcer.

The patient's remaining hospital course was uneventful, and she was released June 1, 1988, to the care of her own physician. Rani-

tidine therapy was continued at a reduced dose for the patient's renal insufficiency.

Discussion

With the availability of the well-standardized template bleeding time, hemostatic abnormalities can be readily documented and serially quantitated. The patient had an occasional ecchymosis but no history of significant bleeding disorder or recent use of a non-steroidal anti-inflammatory agent. However, with acute gastrointestinal bleeding and elevated creatinine, the possibility of an underlying associated hemostatic defect was considered and then confirmed by finding the prolonged template bleeding time. The template bleeding time correlates well with clinical bleeding events.¹

Therapeutic methods used in the setting of a hemostatic defect with abnormal renal function include platelet transfusion and hemodialysis. Neither is universally effective in reversing the coagulation defect and controlling bleeding. When plasma is frozen and then thawed to 4 degrees

Celsius, a precipitate forms. That precipitate is commonly used to treat hemophilia, von Willebrand's disease and factor deficiency.

The mechanism by which this cryoprecipitate both corrects the bleeding time and affects bleeding in renal disease is unknown. Fibrinogen levels increase, but prothrombin time, thrombin time and activated partial thromboplastin time are all unaltered by cryoprecipitate.² Platelet count and platelet aggregation are unaltered.

As in this patient, the effect on the template bleeding time is delayed. Had the bleeding time corrected promptly, it would have supported a diagnosis of von Willebrand's disease, in which a co-factor for primary platelet hemostasis is absent but immediately replaced with the cryoprecipitate.

This patient's bleeding time normalized and remained within the normal range 19 hours after the cryoprecipitate transfusion. With control of the bleeding disorder, she stabilized and improved.

Summary

An elderly patient with upper gastrointestinal bleeding of peptic ulcer disease and renal insufficiency was presented. Her bleeding was complicated by an underlying hemostatic defect related to her renal disease and secondary bleeding prolongation. Cryoprecipitate reversed the defect and stopped the clinical bleeding.

In the elderly adult population where renal insufficiency and elevated creatinines are more common, it is important to consider the hemostatic defect that may be associated with renal disease and bleeding. Infusion of cryoprecipitate may result in both a delayed correction of the abnormal bleeding time and reversal of clinical bleeding. □

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May CME quiz answers

The following letters are the answers to the CME quiz that appeared in the May 1989 issue: "Neonatal Extracorporeal Membrane Oxygenation."

- | | |
|---------------|---------------|
| 1. e | 6. f |
| 2. d | 7. d |
| 3. a | 8. a, c, d, e |
| 4. b | 9. d |
| 5. a, b, c, e | 10. a |

Transesophageal echocardiography

A technique for intraoperative monitoring

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Echocardiography (ECHO) has long been recognized as an effective noninvasive means of diagnosing cardiac abnormalities and assessing cardiac function in the perioperative patient. With the development of the transesophageal echo (TEE) transducer, the use of ECHO has been expanded to intraoperative monitoring.

TEE has demonstrated its ability to give immediate and continuous information to the anesthesiologist and surgeon. Transesophageal imaging was first reported by Frazin in 1976.¹ This initial experience involved the use of an M-mode esophageal transducer for the patient in whom traditional transthoracic imaging failed. A major advantage of transesophageal imaging is that less tissue is present between the transducer and the heart, making imaging easier in obese or emphysematous patients. It also allows continuous monitoring throughout cardiac procedures with an open chest.^{2,9}

Approximately two and a half

years ago, an ECHO system with an esophageal probe (Diasonics 3.5 mHz TEE probe, Diasonics Cardiovue 6400), designed to be used in patients having major vascular surgery, was obtained by our hospital. This equipment has since been used to monitor more than 100 patients under general anesthesia during cardiovascular procedures.

Methods and materials

After the induction of anesthesia and intubation, a 3.5 mHz TEE scope was carefully placed in the patient's esophagus through a bit

tion abnormalities (SWMA).² Monitoring was continued primarily in this position unless valve function was to be evaluated. By changing the position of the scope in the esophagus and manipulating the controls on the scope, one can readily change from a cross-sectional image to a longitudinal one. All studies were recorded on 1/2" VHS videotape.¹⁰

Interpretation

TEEchocardiography can assess a number of cardiac functions and anatomy. Some of the most com-

TEE has demonstrated its ability to give immediate and continuous information to the anesthesiologist and surgeon.

block mouthpiece. At approximately 20 cm from the alveolar ridge, imaging was begun for optimal placement. An intraoperative exam of the heart included views of the aortic valve, a long axis four-chamber view noting function of the mitral and tricuspid valve, and a short axis or cross-section of the patient's left ventricle at the level of the papillary muscles to continuously monitor for segmental wall mo-

mon include:

- 1) Global myocardial function – Although some computer-generated programs can numerically analyze function, qualitative assessment using the short axis view is generally used in the operating room. With a little experience, the practicing anesthesiologist can find the two-dimensional images very helpful in assessing cardiac function.^{2,8}

- 2) Regional wall motion – The

cross-sectional view, or short axis, is the most useful projection for recognizing segmental wall motion abnormalities. This evaluation is best made at the level of the papillary muscles. SWMA are the first reflections of early ischemia, even preceding functional or electrocardiogram changes.^{3,4,5,11}

3) Preload – Familiarity with the cross-sectional ECHO view during the course of an operation will allow the qualitative assessment of a sudden change in preload (i.e., the heart suddenly appears empty or full) and allows rapid assessment of the patient's volume status.^{6,8,12}

4) Cardiac anatomy – TEE also can be helpful in identifying anatomical features that may influence cardiac performance. Mitral valve prolapse, hypertrophic cardiomyopathy, thickened and calcified valve leaflets, aortic dissection and intracardiac air can be identified easily.^{2,8}

Case report

A 58-year-old white man with congestive heart failure and mitral regurgitation after a recent inferior myocardial infarction was brought to the operating room for intended coronary artery bypass grafts and mitral valve replacement.

The TEE was placed easily after the induction of anesthesia and endotracheal intubation. A dobutamine drip was running continuously to maintain the patient's blood pressure in the 90-100 systolic range and pulmonary artery pressure of 50/25. The TEE images showed fair ventricular function and abnormal motion of the mitral valve leaflets.

Approximately 20 minutes after the operation began, the patient's blood pressure decreased to 80 systolic and pulmonary artery

pressure rose to 74/29. TEE showed obvious failure of the leaflets to coapt. Immediate treatment with intravenous nitroglycerin bolus and drip resulted in great improvement in blood pressure to 140 systolic, pulmonary artery pressure to 27/16 and obvious correction of valve dysfunction.

As a result of the images seen with the TEE, the patient was believed to have mitral regurgitation secondary to his ischemia. Revascularization was performed and a mitral annular ring was placed, rather than mitral valve replacement.

Another case report

A 50-year-old man underwent a triple coronary artery bypass graft procedure for unstable angina. His disease included a total occlusion on the left anterior descending coronary artery. After he was anesthetized, a two-dimensional TEE study was performed. Mitral and aortic valve function appeared normal, and left ventricle function appeared to be good in both long and short axis views. The short axis (cross-section of the left ventricle) was monitored continuously during the procedure.

Before weaning the patient from cardiopulmonary bypass, the echocardiogram revealed a segment of the anterior left ventricle where the wall motion was markedly depressed. This area corresponded in the area supplied by the left anterior descending coronary artery, which had been bypassed with a left internal mammary artery graft.

A nitroglycerin drip was instituted, and perfusion pressure was raised with phenylephrine. The SWMA was reversed during the next five to 10 minutes, and the patient was weaned successfully

from cardiopulmonary bypass with only a nitroglycerin drip. Continuous monitoring of the TEE revealed excellent left ventricular contractility for the rest of the procedure.

Summary

Cardiac ischemia and myocardial infarction continue to be major causes of perioperative morbidity and mortality, despite aggressive intraoperative monitoring. Intraoperative TEE is evolving as a helpful noninvasive monitor in patients with coronary artery disease and valvular heart disease.¹¹ Early detection of ischemia and evaluation of valve function with continuous imaging has allowed the use of TEE as a dynamic tool to optimize therapeutic management of cardiac dysfunction that was not always readily available by conventional invasive techniques.³ As new equipment and techniques are developed, this monitoring method will undoubtedly find even more frequent intraoperative use. □

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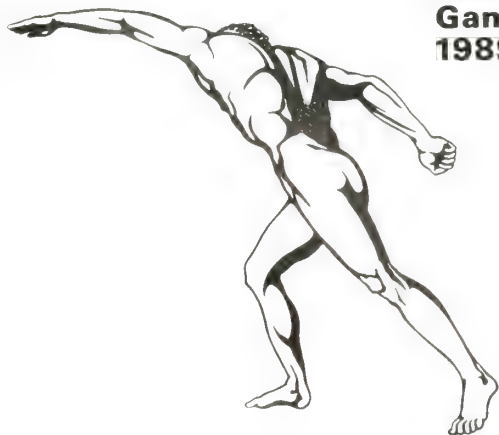
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Summary of NIH Consensus Development Conference

David T. Brown, D.D.S.
Indianapolis

The National Institute of Dental Research (NIDR), the National Institutes of Health (NIH) Office of Medical Applications of Research and the U.S. Food and Drug Administration held the second Consensus Development Conference on Dental Implants in June 1988.

The use of dental implants has escalated dramatically in the past few years, and a continuation of this trend is anticipated. According to the consensus statement,

the number of dental implants placed in the United States increased four-fold from 1983 to 1987.

The consensus panel's statement attempted to respond to questions regarding long-term effectiveness of implants; indications and contraindications of the various types of dental implants; surgical, restorative and periodontal patient management; health risks; and future research directions for dental implantology. The panel noted that a large proportion of endosseous, subperiosteal and transosteal implants has remained in place for at least 10 years. Indications

and contraindications for a number of dental implants were described.

A multidisciplinary approach to the surgical, prosthodontic and periodontal management of implant insertion and maintenance was advised.

Suggestions included long-term comparison studies of the different types of implants and the establishment of a national dental implant registry. □

The author is assistant professor, Department of Prosthodontics, Indiana University School of Dentistry, Indianapolis.

■ drug names

Look-alike and sound-alike drug names

	CIDEX	LIDEX
Category:	Antiseptic & germicide	Corticosteroid
Brand name:	Cides, Surgikos	Lidex, Syntex
Generic name:	Glutaraldehyde	Fluocinonide
Dosage forms:	Solution	Ointment, cream, solution, gel
	CALCIDRINE	CALCIPARINE
Category:	Cough preparation	Anticoagulant
Brand name:	Calcidrin, Abbott	Calciparine, DuPont Critical Care
Generic name:	Codeine-calcium iodide	Heparin calcium injection
Dosage forms:	Syrup	Injection

Benjamin Teplitsky, R. Ph.
Brooklyn, N.Y.

Look-alike and sound-alike drug names can be misinterpreted by a nurse reading doctors' orders or by a pharmacist compounding physicians' prescriptions.

Such misunderstandings can result in the administration of a drug not intended by the prescriber. Awareness of such look-alike and sound-alike drug names can reduce potential errors. □



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MEDICAL PLAN 3

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MEDICAL PLAN 4

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MEDICAL PLAN 5

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MEDICAL PLAN 6

- Comprehensive Major Medical expense protection — \$100 Calendar Year Deductible
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Indiana State Medical Association
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(317) 926-4424
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Dr. Holwick outside of hospital where she practices as a civilian traumatologist.



Dr. Holwick in operating room at Letterman Army Medical Center.

JANN L. HOLWICK, M.D.

General and Trauma Surgeon.
Captain, U.S. Army Reserve.

EDUCATION University of Southern California, B.S.;
University of California School of Medicine.

RESIDENCY Harbor General Hospital—UCLA
Medical Center.

HOSPITAL AFFILIATIONS St. Luke Hospital;
Huntington Memorial Hospital, Pasadena, California;
Traumatologist, Arcadia Methodist Hospital, Arcadia,
California.

OUTSTANDING ACHIEVEMENTS Borden
Freshman Prize; Alpha Lambda Delta; Phi Beta Kappa;
Phi Kappa Phi; Bovard Award; ALD Award; American
Institute of Chemists Medal Award; Summa Cum Laude,
University of California; Alpha Omega Alpha.

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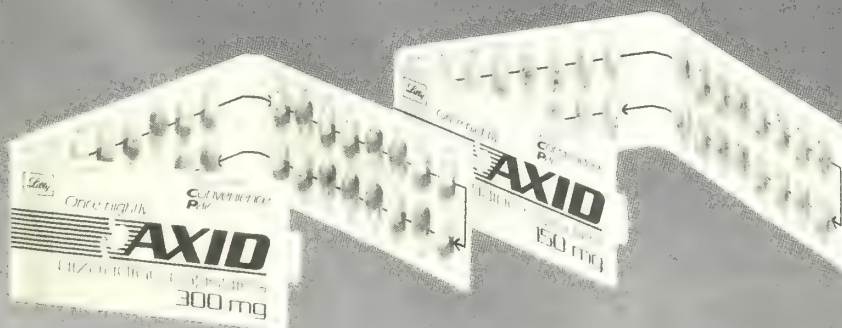
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Brief Summary

Consult the package literature for complete information.

Indications and Usage Axid is indicated for up to eight weeks for the treatment of active duodenal ulcer. In most patients, the ulcer will heal within four weeks. Axid is indicated for maintenance therapy for duodenal ulcer patients at a reduced dosage of 150 mg b.i.d. after healing of an active duodenal ulcer. The consequences of continuous therapy with Axid for longer than one year are not known.

Contraindication Axid is contraindicated in patients with known hypersensitivity to the drug and should be used with caution in patients with hypersensitivity to other H₂-receptor antagonists.

Precautions: General — 1. Symptomatic response to nizatidine therapy does not preclude the presence of gastric malignancy.

2. Because nizatidine is excreted primarily by the kidney, dosage should be reduced in patients with moderate to severe renal insufficiency.

3. Pharmacokinetic studies in patients with hepatorenal syndrome have not been done. Part of the dose of nizatidine is metabolized in the liver. In patients with normal renal function and uncomplicated hepatic dysfunction, the disposition of nizatidine is similar to that in normal subjects.

Laboratory Tests — False-positive tests for urobilinogen with Multistix® may occur during therapy with nizatidine.

Drug Interactions — No interactions have been observed between Axid and theophylline, chlorazepate, lorazepam, lidocaine, phenytoin, and warfarin. Axid does not inhibit the cytochrome P-450-linked drug-metabolizing enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of aspirin daily, increases in serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Carcinogenesis, Mutagenesis, Impairment of Fertility — A two-year oral carcinogenicity study in rats with doses as high as 500 mg/kg/day (about 80 times the recommended daily therapeutic dose) showed no evidence of a carcinogenic effect. There was a dose-related increase in the density of enterochromaffin-like (ECL) cells in the gastric oxyntic mucosa. In a two-year study in mice, there was no evidence of a carcinogenic effect in male mice, although hyperplastic nodules of the liver were increased in the high-dose males as compared with placebo. Female mice given the high dose of Axid (2,000 mg/kg/day, about 330 times the human dose) showed marginally statistically significant increases in hepatic carcinoma and hepatic nodular hyperplasia with no numerical increase seen in any of the other dose groups. The rate of hepatic carcinoma in the high-dose animals was within historical control limits seen for the strain of mice used. The female mice were given a dose larger than the maximum tolerated dose, as indicated by excessive (50%) weight decrement as compared with concurrent controls and evidence of mild liver injury (transaminase elevations). The occurrence of a marginal finding at high dose only in animals given an excessive and somewhat hepatotoxic dose, with no evidence of a carcinogenic effect in rats, male mice, and female mice (given up to 360 mg/kg/day, about 60 times the human dose), and a negative mutagenicity battery are not considered evidence of a carcinogenic potential for Axid.

Axid was not mutagenic in a battery of tests performed to evaluate its potential genetic toxicity, including bacterial mutation tests, unscheduled DNA synthesis, sister chromatid exchange, mouse lymphoma assay, chromosome aberration tests, and a micronucleus test.

In a two-generation, prenatal and postnatal fertility study in rats, doses of nizatidine up to 650 mg/kg/day produced no adverse effects on the reproductive performance of parental animals or their progeny.

Pregnancy — Teratogenic Effects — Pregnancy Category C — Oral reproduction studies in rats at doses up to 300 times the human dose and in Dutch Belted rabbits at doses up to 55 times the human dose revealed no evidence of impaired fertility or teratogenic effect, but, at a dose equivalent to 300 times the human dose, treated rabbits had abortions, decreased number of live fetuses, and depressed fetal weights. On intravenous administration to pregnant New Zealand White rabbits, nizatidine at 20 mg/kg produced cardiac enlargement, coarctation of the aortic arch, and cutaneous edema in one fetus and at 50 mg/kg it produced ventricular anomaly, distended abdomen, spinal bifida, hydrocephaly, and enlarged heart in one fetus. There are, however, no adequate and well-controlled studies in pregnant women. It is also not known whether nizatidine can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Nizatidine should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers — Studies conducted in lactating women have shown that <0.1% of the administered oral dose of nizatidine is secreted in human milk in proportion to plasma concentrations. Caution should be exercised when administering nizatidine to a nursing mother.

Pediatric Use — Safety and effectiveness in children have not been established.

Use in Elderly Patients — Ulcer healing rates in elderly patients are similar to those in younger age groups. The incidence rates of adverse events and laboratory test abnormalities are also similar to those seen in other age groups. Age alone may not be an important factor in the disposition of nizatidine. Elderly patients may have reduced renal function.

Adverse Reactions: Clinical trials of nizatidine included almost 5,000 patients given nizatidine in studies of varying durations. Domestic placebo-controlled trials included over 1,300 patients given nizatidine and over 1,300 given placebo. Adverse events reported in the domestic placebo-controlled trials: sweating (1% vs 0.2%), urticaria (0.5% vs < 0.01%), and somnolence (2.4% vs 1.3%) were significantly more common in the nizatidine group. A variety of less common events were also reported; it was not possible to determine whether these were caused by nizatidine.

Hepatic — Hepatocellular injury, evidenced by elevated liver enzyme tests (SGOT [AST], SGPT [ALT], or alkaline phosphatase), occurred in some patients and was possibly or probably related to nizatidine. In some cases, there was marked elevation of SGOT/SGPT enzymes (greater than 500 IU/L) and, in a single instance, SGPT was greater than 2,000 IU/L. The overall rate of occurrences of elevated liver enzymes and elevations to three times the upper limit of normal, however, did not significantly differ from the rate of liver enzyme abnormalities in placebo-treated patients. All abnormalities were reversible after discontinuation of Axid.

Cardiovascular — In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in two individuals administered Axid and in three untreated subjects.

CNS — Rare cases of reversible mental confusion have been reported.

Endocrine — Clinical pharmacology studies and controlled clinical trials showed no evidence of androgenic activity due to Axid. Impotence and decreased libido were reported with equal frequency by patients who received Axid and by those given placebo. Rare reports of gynecomastia occurred.

Hematologic — Fatal thrombocytopenia was reported in a patient who was treated with Axid and another H₂-receptor antagonist. On previous occasions, this patient had experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported.

Integumentary — Sweating and urticaria were reported significantly more frequently in nizatidine- than in placebo-treated patients. Rash and exfoliative dermatitis were also reported.

Hypersensitivity — As with other H₂-receptor antagonists, rare cases of anaphylaxis following administration of nizatidine have been reported. Because cross-sensitivity in this class of compounds has been observed, H₂-receptor antagonists should not be administered to individuals with a history of previous hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg, bronchospasm, laryngeal edema, rash, and eosinophilia) have been reported.

Other — Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever, and nausea related to nizatidine administration have been reported.

Overdosage — Overdoses of Axid have been reported rarely. The following is provided to serve as a guide should such an overdose be encountered.

Signs and Symptoms — There is little clinical experience with overdosage of Axid in humans. Test animals that received large doses of Axid have exhibited cholinergic-type effects, including lacrimation, salivation, emesis, miosis, and diarrhea. Single oral doses of 800 mg/kg in dogs and of 1,200 mg/kg in monkeys were not lethal. Intravenous median lethal doses in the rat and mouse were 301 mg/kg and 232 mg/kg, respectively.

Treatment — To obtain up-to-date information about the treatment of overdose, a good resource is your certified regional Poison Control Center. Telephone numbers of certified poison control centers are listed in the Physicians' Desk Reference (PDR). In managing overdose, consider the possibility of multiple drug overdoses, interaction among drugs, and unusual drug kinetics in your patient.

If overdosage occurs, use of activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis for four to six hours increased plasma clearance.

PV 2096 AMP

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Medical museum notes

(continued from page 428)

lege. He also became active in local civic improvement and was responsible for developing the city parks and boulevard system in Indianapolis.

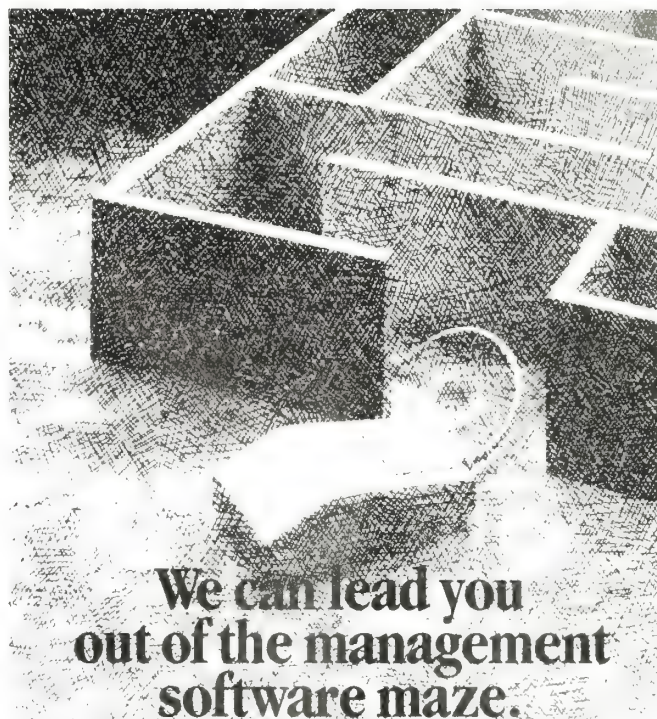
Dr. Frank B. Wynn (1860 to 1922) has been the subject of numerous articles and photographs. This caricature is the only evidence that reveals him as a cigar smoker. The Medical Educational Resources Program at the Indiana University Medical Center currently is producing a biographical videotape about Dr. Wynn. □

New schedule affects regular monthly scientific articles

Effective with the July issue, three regular, monthly scientific articles in *INDIANA MEDICINE* will appear in alternating months.

The Continuing Medical Education article and quiz provided by the Indiana University School of Medicine will be published in odd-numbered months starting in July. However, the answers to the CME quiz will be printed the month after the quiz is published and may be found by referring to the contents page.

The Critical Care Medicine article, submitted by Methodist Hospital of Indiana, and the Radiology Clinic article, submitted by the Department of Radiology at the Indiana University School of Medicine, will be published in even-numbered months starting in August. □



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MATEC: Retrofitting health professionals for the AIDS era

Judith D. Johnson, M.D.
Indianapolis

Editor's note: This is the first in a monthly series of three AIDS articles.

As of Feb. 28, 1989, there were 88,096 reported AIDS cases in the United States, and as of April 1, there were 503 cases in Indiana. In 1985, fewer than 30 AIDS cases were reported in Indiana.

How many HIV-infected and infectious people are there in Indiana? The U.S. Public Health Service has suggested that there may be 50 to 100 HIV seropositive individuals for each diagnosed AIDS case, providing a range for Indiana of 25,150 to 50,300 HIV-infected people at this time. Even if more conservative multipliers are used and if HIV transmission in the state stopped today, we can predict that thousands of Indiana citizens will become ill from HIV infection and seek care in the next few years.

How are health and human service professionals preparing for this?

In the fall of 1988, the Midwest AIDS Training and Education Center, Indiana site (MATEC/Indiana) was established in the Indiana University School of Medicine, Department of Medicine, Division of Infectious Diseases. MATEC/Indiana provides education and training to health, mental health and social service

professionals throughout Indiana in the field of HIV infection and AIDS. Under a grant from the Health Resources and Services Administration (HRSA) of the U.S. Public Health Service, three infectious disease physicians, a psychiatrist, a dentist, a psychologist, a social worker, two nurses, a medical education specialist and a sex researcher form a multidisciplinary team that mirrors the multifaceted service needs of the HIV-infected patient.

Members of the MATEC/Indiana group are all Indiana University faculty, and several provide direct care to HIV-infected patients, either through their respective schools and departments, as

methods among its sites and with other ETC around the country, each site has the flexibility to respond to the priority needs of its service area.

In funding MATEC and other ETC, HRSA recognizes the vital importance of building the nation's capacity to provide effective and humane care for HIV-infected people and people with AIDS. No one knows when the exponential increase in new cases will subside, but before the epidemic is over, every primary care physician in the United States probably will care for at least one HIV-infected patient, whose serostatus may or may not be recognized.

Physicians and other care providers need professional education and training programs that are specific to AIDS and HIV infection. Many health care providers completed their

MATEC/Indiana provides education and training to health, mental health and social service professionals throughout Indiana in the field of HIV infection and AIDS.

community volunteers or both. Working in the quarters of Wishard Memorial Hospital, Indianapolis, MATEC/Indiana offers conferences, workshops and seminars as well as telephone consultation, information and referral.

MATEC/Indiana is one of seven sites in the six-state MATEC project, which is based at the University of Illinois at Chicago. This six-state project is, in turn, one of 13 similar education and training centers (ETC) that have been established around the country since 1987. While MATEC shares successful curricula, materials and

training long before this disease appeared and now must acquire new knowledge and skills. Physicians and other care providers also may have to examine their personal attitudes, values and behaviors to become effective caregivers for these patients, so programs must address educational needs in the affective, behavioral and cognitive domains. In AIDS education, work in the affective domain is particularly important because in all professional groups there may be emotional and attitudinal barriers to professional involvement.

First, AIDS is frightening. There is a tendency in some circles to try "normalizing" AIDS by emphasizing its similarities with other diseases like hepatitis B. Although this comparison is designed to be reassuring, the high mortality associated with HIV infection makes these attempts sound glib and may raise suspicions that the "experts" are unaware, unconcerned or concealing facts.

Another approach to normalization involves the death toll criterion. For example, we point out that 350,000 deaths per year in this country are related to smoking. In attempting to put the HIV epidemic into such a perspective, the infectious nature of HIV is trivialized and anxieties persist. After all, even a smoking health care worker need not fear acquiring lung cancer from caring for a patient. Finally, people cannot and do not forget, that unlike most other diseases with which it is compared, HIV infection is thought to be uniformly fatal.

HIV infection and AIDS are new diseases. The natural history of HIV infection is poorly understood, and the clinical consequences of infection are protean and complex. Antigenic drift, the complexity of our immune system and the lack of animal models have slowed vaccine development. An effective vaccine probably will not be available during this century. To date, only zidovudine (AZT) is available by prescription and has a significant effect on the clinical course of HIV infection. Lack of curative treatments and the prolonged, downward course of HIV infection are discouraging to even the most positive and hopeful caregiver.

These facts certainly increase the anxiety associated with caring for HIV-infected people. But some-

times the fear of occupational infection becomes obsessive and may block awareness of other personal risk factors. Dr. Constance Wofsy of the University of California at San Francisco has observed that health care workers' perceptions of personal risk evolve over time through five stages.¹ The first stage is phobic avoidance; the second is a demand for a totally risk-free environment. As we become more knowledgeable, we realize AIDS is not going to go away, but risks can be managed. We then become seriously interested in self-education and finally arrive at a genuine concern for affected patients.

By arriving at a balanced perspective on occupational risk, providers can acknowledge what has been proven through careful prospective study: The risk of infection to health care workers, even with confirmed exposures to HIV-infected body fluids, is less than one-half of 1% per exposure.² The vast majority of HIV-infected health care workers acquire their infections through the same personal off-the-job behaviors as the general population. We also need to see the risks of HIV infection in proportion to other daily health risks.

Physicians and other health care providers may have fears besides occupational risk of infection. Sometimes fear of social stigmatization and loss of other patients makes us reluctant to be publicly identified as care providers for HIV-infected patients. Other health care providers feel unclear about what legal obligations and constraints are involved or suspect an increasing burden of red tape and paperwork surrounding the delivery of care. Health and human service professionals need

and deserve education and support if these barriers are to be overcome.

Such personal fears are not the only challenge we face with this disease. AIDS is more stigmatizing than any other disease because of its association with illicit and/or "immoral" behaviors. In particular, homophobia may complicate the ability to provide professional and compassionate care to HIV-infected people. A common public opinion is that AIDS patients deserve their fate. In multiple public opinion surveys reviewed by the Harvard School of Public Health, 20% of the respondents subscribed to the "just deserts" theory of AIDS causation.³ These were randomized, large sample polls, so we can assume health care providers were included in the samples.

In addition, real and perceived differences in the sociodemographics of HIV-infected patients may create obstacles to achieving confidence and comfort with care delivery. AIDS cases associated with illicit intravenous drug use (IVDU) are increasing as a proportion of the total, especially in the urban epicenters on the East Coast. Many physicians have had adverse experiences caring for drug users, while some may be uncomfortable due to lack of experience.

Moreover, providers may come from different ethnic and cultural backgrounds than their patients. Blacks and Hispanics have been tragically and disproportionately affected by this epidemic, yet minority doctor/population ratios continue to be much lower than for whites. Some physicians may lack the awareness of or the experience in dealing with specific cultural values and concerns of minorities.

Finally, after more than 88,000 cases and more deaths than suffered in Vietnam, education is still the only effective weapon against continued spread of HIV. Often, health care providers do not know what education really means and lack the skills to be effective teachers. We may have unrealistic expectations for our patients and assume they will be uniformly and persistently altruistic, self-abnegating and compliant. But, we are attempting to teach people to modify behaviors that we ourselves might be reluctant to change.

For example, in the area of sexual behavior, people need to stop and ask themselves whether they would (or could) either change their heterosexual orientation or permanently accept a sex life without the exchange of bodily fluids. Even condom use is difficult to regularize, as our colleagues in family planning can attest. Pragmatically, health care providers must make risk education, not risk elimination, the educational objective.

On the optimistic side, physicians and other health care providers actually have good evidence of significant risk-reducing behavior change in the high-risk IVDU and male homosexual populations studied.⁴ But, extensive social, psychological and medical supports are needed to help high-risk infected or uninfected people make sustained behavioral changes. Anyone who has struggled with obesity or tobacco use can attest to the difficulty of achieving permanent behavioral change. Presenting facts and figures to patients is not enough. Informing them of their serostatus and risk factors isn't enough either. Caregivers must

become more sophisticated in their educational efforts with higher risk individuals.

Low-risk patients need education, too, because behaviors that increase the risk of viral acquisition become riskier as the prevalence of HIV infection rises. Even people who do not identify themselves as practicing high-risk behaviors may actually do so.

***Risk is associated
with specific
behaviors and exists
on a continuum
from zero to one,
not as a binary
variable.***

Forty years ago, Kinsey discovered that heterosexuality is on a continuum with homosexuality,⁵ and that an individual may have occasional same-sex contacts without self-identifying as homosexual. Occasional anonymous unprotected sex, just like occasional intravenous drug use, will produce at least some new cases. Some women may be unaware of a partner's bisexuality and, therefore, not perceive themselves to be at risk. Risk is associated with specific behaviors and exists on a continuum from zero to one, not as a binary variable.

Because of these realities, many caregivers have experienced the altogether human and normal inclination to withdraw and to remove themselves from careers, specialties, institutions, facilities or employment contracts that require them to care for HIV-

infected people and people with AIDS. There are multiple ways to rationalize this impulse. The risk of occupational HIV acquisition can be, and often is, exaggerated. Or a physician can claim to lack professional qualifications to care for HIV infection and claim a duty to refer a patient to another provider. These physicians have good reason not to learn about HIV and AIDS – acquiring qualifications would create an ethical dilemma: To accept and/or retain patients who could otherwise be rejected or referred.⁶

Physicians and other health care professionals have an obligation to educate themselves about HIV infection and, within the limits of expertise, to help care for HIV-infected people. First, caregivers must become educators, assisting patients to remain uninfected or to prevent transmission of their infection. Information and advice provided in a nonjudgmental and accepting manner make behavioral change more feasible than it may have been before.

Secondly, Emanuel has made a cogent argument for sharing the risk of occupational HIV infection within specialties.⁷ For example, if there is only one surgeon in town who will take HIV-infected cases, the surgeon's long-term risk is compounded each time a case is accepted from a colleague who refuses to operate on that patient. The same reasoning applies to obstetricians, anesthesiologists, dermatologists, gastroenterologists, pulmonologists, etc.

Finally, as Northfelt, Hayward and Shapiro recently noted, HIV infection is becoming a primary care disease.⁸ There will never be enough infectious disease specialists to handle the caseload alone. Patients with opportunistic infec-

tions and cancers who are now routinely referred to specialists can and must be managed as long as possible by their primary providers. Moreover, HIV-infected people have many health problems unassociated with their serological status. Community-based physicians must be willing to treat routine non-HIV-related illnesses that affect these patients. Until a vaccine and a cure are found, physicians are in this together. We have the opportunity to become examples of compassion and responsibility to society.

MATEC/Indiana tries to help physicians and other health care providers, in a range of professions and specialties, become more involved. Information on AIDS and HIV infection can be found in the literature of most health and human service professions. Generally, MATEC/Indiana offers customized programs that make maximal use of our clients' time.

For physicians in particular, we will be offering programs that address both ends of the clinical spectrum: identification, counseling and management of the asymptomatic seropositive patient, and special clinical topics in diagnosis and management of opportunistic infections and cancers.

The problem of affective education – removing the barriers of fear, alienation and frustration – is one that MATEC cannot address successfully unless our clients want help. While many care providers do want help with emotional issues, our experience has been that physicians are the most resistant of any professional group to the public exploration of personal feelings and attitudes. MATEC/Indiana is willing to

Conference on HIV infection set for July 21, 22

"HIV Infection in Primary Medical Practice" will be the focus of a conference designed to increase the medical practitioner's level of confidence in providing ongoing primary management of HIV-infected patients who are asymptomatic or show early clinical manifestations of HIV disease.

The conference will be July 21 and 22 at the University Place Executive Conference Center and Hotel in Indianapolis. Sponsors are the Indiana University School of Medicine, the Midwest AIDS Training and Education Center (MATEC) and the Marion County Health Department.

Participants will learn about topics including: the relationship between the HIV and substance abuse epidemics in the United States; special issues in caring for ethnic minority clients; medical risk factors for acquisition of HIV and other sexually transmitted diseases; immunology of HIV infection and immunomodulating therapies; assessment of early clinical manifestations; initiation and management of HIV therapy; psychosocial aspects of HIV care from the patient's perspective; and Indiana AIDS statutes and regulations.

I.U. School of Medicine faculty members who will address participants are:

- Virginia A. Caine, M.D., assistant professor of medicine, Division of Infectious Diseases, and medical director, Bell Flower Clinic;
- Kenneth H. Fife, M.D., associate professor, Departments of Medicine, Microbiology and Immunology, and associate director, AIDS Clinical Trials Group;
- Daniel Hicks, M.D., assistant professor of psychiatry and director, Division of Consultation/Liaison Psychiatry;
- Judith D. Johnson, M.D., assistant professor of medicine, Division of Infectious Diseases, and MATEC project director;
- Robert B. Jones, M.D. and Ph.D., professor of medicine, microbiology and immunology, chief, Division of Infectious Diseases, Department of Medicine, and director, AIDS Clinical Trials Group; and
- Richard B. Kohler, M.D., professor of medicine, Division of Infectious Diseases.

Guest faculty members will be:

- James Curran, M.D., director, AIDS Program, associate director for HIV/AIDS, Center for Infectious Diseases, Centers for Disease Control, U.S. Public Health Service, Atlanta, Ga.
- King K. Holmes, M.D., Ph.D., professor and vice-chairman, Department of Medicine, University of Washington, and chief of medicine, Harborview Medical Center, Seattle, Wash.;
- H. Clifford Lane, M.D., senior investigator, LIR, National Institute of Allergy and Infectious Diseases (NIAID), and deputy clinical director, NIAID, National Institutes of Health, Bethesda, Md.;
- Kathleen G. Lucas, J.D., director, Office of Legal Affairs, Indiana State Board of Health;
- Benny Primm, M.D., president, Urban Resource Institute, Addiction Research Treatment Corporation, Brooklyn, N.Y.; and
- Eric A. Yancy, M.D., Indianapolis pediatrician and president, Aesculapian Medical Society.

The conference has been approved for 15 hours of Category I credit. It is designed for the medical practitioner in general practice, general internal medicine, family practice and obstetrics and gynecology. The fee for the two-day program is \$150, which includes lunch, refreshments and materials. Residents in training may attend at no charge, but lunches and materials will not be included. The registration deadline is July 15. For more information, contact the MATEC Project Office, Wishard Memorial Hospital, WOP 312, Indianapolis, IN 46202, (317) 630-7133. □

facilitate such efforts with physicians if asked.

I am optimistic that in time we can normalize AIDS, at least to the extent of assuring that humane, high quality care is available in Indiana. My MATEC colleagues and I are committed to helping professionals acquire confidence and comfort with HIV care in a less lonely and pressured manner than we ourselves have had to acquire it. This epidemic is not going away, and caregivers need to face it together. □

The author is board-certified in medicine and in infectious diseases. She is assistant professor of medicine in the Division of Infectious Diseases at the Indiana University School of Medicine. In addition to directing the Indiana Site of the Midwest

AIDS Training and Education Center, she is director of the Infectious Disease Research Clinic of the Indiana University School of Medicine AIDS Clinical Trials Group and is infectious disease consultant to the Indiana State Board of Health.

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For information on MATEC services, contact the project office at (317) 630-7133.

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Effective communication tools for marketing your practice

Myra Borshoff, APR
Indianapolis

Editor's note: This is the second in a three-part series on marketing your medical practice.

Successful marketing must begin with research – an assessment of the marketplace to identify needs, followed by the production of services that adequately meet the identified needs. The next step is to develop a strategic marketing plan including various information tools that will communicate the availability of services to those who need them. (Marketing research and marketing plans for medical practices were presented in part one of this series).

Communication of medical services presents a complex undertaking involving the written word, the spoken word, the physician, the office staff and the patient. It is an essential part of building and maintaining a successful medical practice.

Many methods are available to communicate the availability of your medical services. The appropriate methods are determined by the practice goals. The specific programs you implement will depend on what the internal and external assessments reveal as your practice objectives, as well as your budget restraints.

Attracting new patients

Referrals from other physicians – Other health care providers in your community represent one of your leading referral sources. Activities such as

thanking physicians for referrals with a personal note or telephone call, conducting or cosponsoring educational seminars, joining the local medical society and visiting area physicians to introduce yourself and your practice can be very effective.

Printed items used as effective referral tools include: 1) a practice brochure with information about how and when to refer; 2) a newsletter that explains to other physicians the services you provide; and 3) a rotary file card, which could be sent in a mailing or distributed at a seminar.

***Consider
developing a packet
of information for
physicians to give
the patients they
refer to you.***

Consider developing a packet of information for physicians to give the patients they refer to you. This packet could include a "letter of transmittal" form on which the referring physician can write the patient's name, reason for referring and his/her own name and telephone number; a check-off form on the back of the letter of transmittal with instructions to help the patient prepare for the appointment; a copy of your patient information brochure; a recent issue of your patient newsletter; and a medical history form that the patient can complete be-

fore coming to your office.

Referrals from patients – Current patients often are the best and the most economical source of referrals. If patients like the way they are treated by you and your staff, they will tell others about your services. However, if they are not happy, they will tell even more people.

To encourage referrals from your patients, provide a self-addressed postcard in your patients' bills and provide space on the back for names and addresses of potential patients. Then, send letters to those people informing them about your services. Don't forget to send a thank-you card to every patient who refers a new patient.

Referrals from pharmacists – Pharmacists often are asked for recommendations by customers who have not had much success with over-the-counter remedies. In addition, new residents may take a previous doctor's prescriptions to the local pharmacy and ask for a recommendation for a new doctor.

Establish a relationship with pharmacists in your area by visiting them and explaining how you can work together. Introduce your practice and ask about the pharmacy's special services and for any printed information concerning the pharmacy. In return, leave copies of your patient brochure and newsletter. Follow up the visit with a thank-you letter.

Increasing visibility in your community – Every time you participate in a community activity, you make people aware of you and your practice. You should make an effort to join civic

and community groups, participate in community health education seminars, help with school health programs, volunteer to make presentations to civic and community groups, become an active member of your local chamber of commerce and become a board member of an organization related to your specialty.

Expanding awareness of your practice through the media – With the current high level of interest in health topics, the local media provide an excellent opportunity for generating new patients. Monitor media coverage and news stories for opportunities to contribute your expertise. Submit articles to your local newspaper on events related to your practice, such as new services, new staff members and special activities. Offer to participate in a television or radio call-in show.

Get-acquainted visit – Today's health care consumers are shopping for physicians. Many prospective patients are interested in get-acquainted visits. These visits should be offered at no charge but need not be more than 15 minutes. Begin by giving potential patients an overview of your practice, tell them about your qualifications and experience, talk about your areas of special interest or expertise and finish with a brief summary of your office hours and policies.

Printed communication tools – In addition to oral communication, written communication through printed materials will give current and potential patients permanent resource material when questions arise about your practice.

An effective way to promote your practice to potential patients is to mail a letter to new residents

welcoming them to the neighborhood. Include a description of your services, a list of office hours, directions to your office and a map.

Practice brochures can give new patients and/or potential referring physicians information about your practice. The brochures also are useful for current patients to keep for reference. A practice brochure should include the following: 1) a message reflecting concern for patients; 2) a thank you for their trust; 3) a statement of your philosophy of care; 4) office hours, address and telephone and emergency numbers; 5) a map with directions to the office; 6) information on how to make an appointment and what to do in an emer-

gency; 7) a brief list of your qualifications; 8) details about the services offered; and 9) pertinent insurance information.

Business cards are another important item. Your staff and patients can distribute them to potential patients. Include a line that distinguishes you from other physicians in your area, such as "evening and Saturday hours available."

A practice newsletter offers an additional means of promoting your services. The primary focus of the newsletter should be on education, topics that are relevant to your patient population and to the time of the year. You also should include changes and im-

provements in your practice, such as new equipment, services or staff members. Other article ideas can develop from the routine questions your staff answers every day, such as office hours, payment and insurance policies.

Advertising – It's often difficult to begin an advertising campaign, especially if few other physicians in your area advertise. The keys to successful advertising are to tailor the words in your advertisement to your target audience, select the appropriate media and evaluate the cost based on exposure. Some reasons to advertise include: 1) opening a new practice; 2) changing location; 3) adding a partner; and 4) starting a new service. Information in your

With the current high level of interest in health topics, the local media provide an excellent opportunity for generating new patients.

advertisement should include a name, logo (if you have one), type of specialty, board certification, location, hours, specific services offered and education.

Yellow pages directory advertising is routine for most practices. It is a powerful, effective marketing tool for generating potential patients. If you decide to use a display ad, include hours, location, names of physicians, benefits of the practice and illustrations (a map, building and/or logo). Consider advertising in local arts programs, civic and community magazines and widely distributed weekly shopping guides.

Customized giveaways – A small item imprinted with your

office name, address and telephone number is good to distribute at seminars, workshops and health fairs.

Making patient visits pleasant

Building location and office decor – The patient's first impression of your practice is tied directly to the ease in which they can find your building, parking areas and office. Office decor and reading materials also contribute to their perceptions of your operation. The office should be attractive and cheerful, and the reception area should have interesting reading materials. Information about your practice and medical specialty should be available.

A practice notebook consisting of a high-quality, three-ring notebook can be placed in the lobby. The same information you would put in a practice brochure is appropriate; however, this format allows more detail about your services, equipment and staff members. It can be typed on stationery, hole punched and placed in a plastic cover.

Scheduling for effectiveness – No one likes to wait, so try not to overbook. Explain delays immediately. In addition, schedule time for new patients each week, so they don't wait several weeks for their first appointment. Consider using a computerized scheduling system.

Staff interaction and support – Educating everyone on staff about your public relations and marketing plans will mean the difference between success and failure of the total effort. Unless you work conscientiously to develop a team, your efforts will be seriously diluted. Every employee must be a part of the program, in whatever ways are appropriate. Everyone

has the ability to act as a referral source. Methods of rewarding employees for their efforts should be developed.

You also should create written policies and provide training for your staff on telephone courtesy, personal appearance and how to greet patients and make them feel welcome. Without personalized, caring service, you will be unable to effectively retain the patients you attract to your practice. Research has shown the critical points of patient perception include: call for appointment; arrival for appointment; reception area; treatment by staff; interaction with physician; and after-visit contact.

Patient/physician communications – The number one complaint patients voice is their doctor's lack of communication. During your exams, allow enough time to fully explain the diagnosis and treatment, as well as answer any questions the patient may have. Whenever limits must be set, tell the patients why and what can happen if they ignore your advice. At the same time, give them a list of "dos" to take the edge off the "don'ts." Provide patient folders, imprinted with a practice logo, for records, health information and practice or educational brochures. Have available videotapes of common diseases or problems. The patient can either borrow the tapes or view them in your office.

Keeping in touch with your patients

Communicating with patients between office visits makes them feel special.

Telephone calls – Ask patients if they would like to be called a few days before their appointment to remind them of the date and

time. Reserve a time each day when patients can call and talk to you or receive your return calls. Check back with patients who call with significant problems to see how they are doing. You also should call patients who have minor surgery in the office to check their progress.

Mailings – Send a postcard to remind patients of appointments. You may not be able to reach everyone by telephone, and those you do reach still may forget to write down the appointment.

A computer-generated but personalized letter that reviews what happened during the appointment could be sent to each patient following a visit.

Mailing holiday and birthday cards to patients also makes them feel special. In addition, read local newspapers and send your patients a note when they make news.

Soliciting patient responses – Conducting a patient survey will enable you to identify weaknesses that need to be corrected and strengths that can be used to build the practice. Data to be gathered might include: appearance of office; friendliness of staff; opinion of services; appropriateness of charges; level of understanding of procedures; promptness of obtaining appointments; how patients became aware of your practice; and opinion of newsletter.

Placing a suggestion box in the reception area is another way to show patients you care about their opinions. Turn patient complaints into opportunities and ways to build patient loyalty. Every complaint should be acknowledged with a call or letter to the patient within 24 hours. Thank the patient for alerting you to the problem, and tell what you have done

or plan to do to correct the problem. Ask patients for suggestions in your newsletter.

Diversifying your efforts

Your marketing plan will dictate the variety of techniques you use to communicate your practice. Marketing is a multifaceted business discipline. Advertising, like publicity, community relations or patient communications, is just one element of a total plan. A failure to balance the marketing effort – using different programs appealing to different market segments – can mean ineffective use

of time and money. A carefully selected media mix should be based on your established marketing objectives.

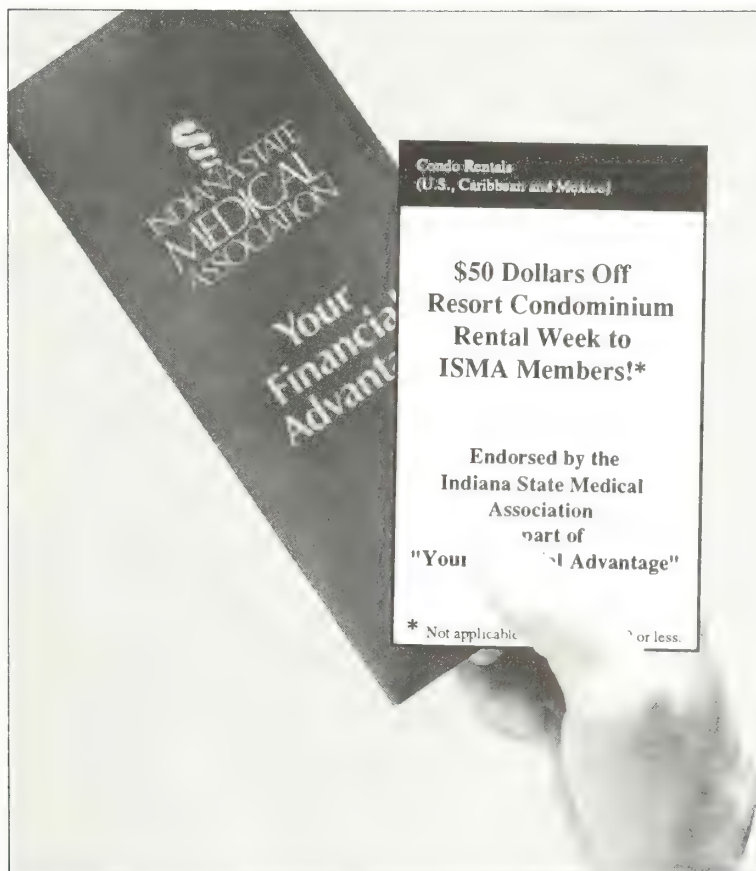
Measuring results

There are many ways to evaluate whether your marketing plan is working depending on your goals and activities. Basically, you should ask all new patients what brought them to your practice, track your marketing costs and marketing-related revenues and measure your results. Track your referrals as well.

The most important point to

remember is that a marketing plan is not a quick fix. It takes time to build a practice. However, physicians who develop and implement carefully researched marketing plans will see both short-term and long-term gains in their practice growths. □

The author is president of Borshoff & Co., Inc., a public relations and marketing communications firm in Indianapolis. Her firm's specialty services include professional services marketing.




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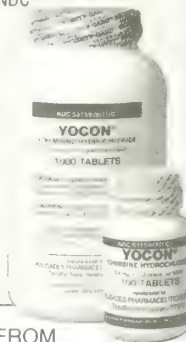
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THE POWER IS ON

Congressmen recognize Section 89 needs overhaul

Gregory Wright, CFP
Indianapolis

Author's note: At press time, the House Ways and Means Committee Chairman Daniel Rostenkowski, D-Ill., introduced legislation that would ease employers' Section 89 administrative burdens. I believe this legislation will be a major starting point in the move to overhaul Section 89, as predicted in this article. Parallel to this move, Sen. Edward Kennedy, D-Mass., introduced legislation requiring all employers to provide group health insurance.

The Internal Revenue Service finally dropped the second shoe and published the long awaited Section 89 compliance regulations. However, you may want to delay the implementation of these complex welfare benefit plan regulations. A drive is afoot to repeal or modify the legislation in the face of threats to tax all employee health benefits.

It has been common practice to tilt employee health benefits in favor of business owners and key executives.

For example, some classes of employees might receive no health insurance benefits or have to pay a hefty portion of the cost, while executives receive comprehensive health benefits plans at no cost to them. Also, low-ranking employees might receive only \$5,000 of group term life insurance and the executive group \$50,000. The company deducted the cost of the insurance premiums and the benefits were not taxable to the employees.

Section 89 is a legislative at-

tempt to end employee benefits discriminatory practices ... and to raise tax revenues.

Employers are now required to provide all employees a full description of all welfare plans, eligibility requirements, etc. Also, they must demonstrate, through complex testing, that these plans are not discriminatory. These plans include health, life and other similar benefits. And the law applies to all employers other than churches and certain church-controlled organizations.

These compliance requirements and nondiscrimination test are the most administratively complex benefit laws ever passed by Congress. However, if you thought the law was overly complex, wait until you read the 300 pages of IRS regulations.

The price for noncompliance is not measured in days or years but in money, sometimes lots of money. Employers cannot deduct the cost of providing the benefits, and employees are taxed on the value of the benefits received.

Section 89 has been described as "an atomic bomb on a suspected anthill - and missing the anthill."

A lobbying effort to repeal Section 89 has found 252 congressmen to support legislation introduced in the House Small Business Committee by Rep. John LaFalce, D-N.Y. Among others, the National Federation of Independent Business and the National Small Business United support the repeal move.

Missing is congressional support from all but one of the 25 members of the Ways and Means Committee. Rep. Dan Rostenkowski, D-Ill., is chairman of that

committee. The move to repeal Section 89 is viewed by Washington insiders as more symbolic than practical.

As business owners experience confusion, huge problems and significant costs associated with implementing Section 89, they are writing their congressional representatives and associations. This issue has attracted more attention than any prior benefit legislation.

Countering the move to repeal, the powerful Rep. Rostenkowski has launched a drive to retain the essence of this complex law.

In a series of speeches, Rostenkowski and his staff have threatened the introduction of legislation that would tax all employee welfare benefits if Section 89 is repealed. Rep. LaFalce, a key player behind the repeal move, candidly suggests taxing "excessive" key-executive benefits in exchange for junking Section 89.

Trade groups that represent larger employers also are missing from the repeal movement. They say it is politically impossible for a repeal not to result in the taxation of benefits, just as Rostenkowski predicts.

Cooler and perhaps more pragmatic heads appear to prefer simplification of Section 89, maybe with special considerations for small businesses.

Proposals are being drafted, and the outlook for a simpler and more workable law looks possible at the time of this writing. A proposal by Sen. Pete Domenici, R-N.M., would exempt employers with fewer than 20 employees and delay compliance for all others for two years. Sen. David Pryor, D-

Ark., has proposed a "safe harbor" from nondiscriminatory tests. However, to qualify, an employer would have to meet tough restrictions.

Although understood by very few in Congress a few months ago, Section 89 has become a top issue because of the amount of complaints from employers and business lobbying groups.

Not to be left behind, some lobbyists say the powerful Rep. Rostenkowski is behind a major draft underway by the House Ways and Means Committee staff to simplify Section 89.

The "final" IRS regulations gave business owners until July 1, 1989, (rather than Jan. 1) to provide

employees with a full description of available benefit plans. Also, the IRS rules for 1989 make it clear that employers do not have to achieve total compliance with the law as long as they make a "good faith and reasonable" effort.

Accordingly, some consider it smart business to delay rushing into a comprehensive Section 89 compliance program. It has been suggested that smaller employers write a brief description of their benefit plans, who is eligible, employee costs, etc. and delay giving the information to employees until the July 1 deadline. Then delay the complex testing until sometime later.

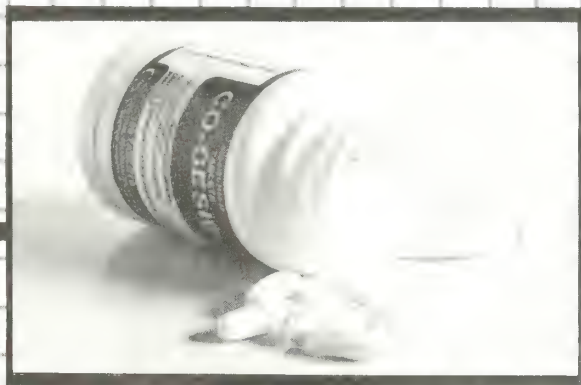
I believe Section 89 will be modified. However, don't count on Section 89's repeal without a heated fight or taxes on employee benefits. I urge you to stay informed and write your U.S. senators and representatives to voice your opinion. □

The author, a certified financial planner, is vice-president of the executive and employee benefits divisions of the Conner Insurance Agency, Inc., Indianapolis.

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Thoughts about papering-up a group practice

Thomas W. Rhodes, ESQ
Atlanta, Ga.

The law books are full of cases where physicians have found it necessary to go to court to untangle a group practice. Typically, one physician withdraws, retires or is forced out of the group practice and cannot reach a financial settlement with the others. (Incidentally, lawyers themselves often end up in lawsuits when their practices break up.)

Prudent physicians in a group practice address the issues before they arise. The group's document should spell out the following items clearly in advance: 1) who will pay the "tail" premium for the group's malpractice insurance covering a former member; 2) how patient files will be handled; 3) how the former member's share of hard assets, such as building and equipment, will be valued and paid; 4) how accounts receivable will be collected and paid; 5) whether the former member will receive anything for his interest in other arguable assets, such as an especially advantageous lease; 6) who will keep the practice's name and telephone number; 7) whether the former member will receive a final bonus, and what will be offset against that bonus; 8) whether there is any covenant not to compete; 9) how the former member gets "off the note" on any of the group practice's loans he has co-signed or agreed to be responsible for; and 10) when the former

member will receive his benefits from the group's retirement plan.

Groups practicing as partnerships should include these provisions in their partnership agreements. Those practicing as professional corporations should include the provisions in the bylaws and in any employment agreements with member-physicians.

Frequently, a corporation agreement is called for to deal with termination matters not covered under other documents. Some provisions also will need to be included in the pension or profit-sharing plan and in any separate documents governing joint ownership of a building or equipment.

If a group practice has invested heavily in buildings or equipment, it may wish to have a "buy-sell agreement" by which the continuing members will buy a deceased member's interest in those assets. Often, the group practice will fund such an agreement by life insurance. Each member's interest should be valued periodically so there is no dispute as to how much is owed.

Physicians in a group practice (and sole practitioners, for that matter) also should give close attention to the relationship between their retirement plans and their wills. As the years go by, many physicians accumulate large amounts in their tax-deferred retirement plans. Sometimes that retirement plan represents the physician's largest single asset.

Some physicians do not realize that, if they die before retirement,

their retirement funds will not necessarily go to beneficiaries designated in their wills. It is important to execute formal documents applying specifically to the retirement plan in order to direct those funds in the event of death.

A group practice also needs to consider how long it will carry a disabled partner. If the group insurance policy pays disability income to a disabled physician, the policy will provide a "waiting period." If the group practice leaves the purchase of disability income insurance to each individual physician, there may be a variety of waiting periods.

A well-drafted employment agreement may distinguish between different types of disability. A physician may be totally and permanently disabled, totally but temporarily disabled, or permanently but not totally disabled. Your group may need to compensate a physician differently for these different conditions.

The group needs to determine and "paper-up" in advance how much and how long it will pay a disabled partner. It is difficult to make that decision for the first time when confronted with the tragedy of a disabled partner and his family. □

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ISMA

Constitutional Amendment

As required by Article X (Amendments) of the ISMA Constitution, INDIANA MEDICINE is publishing the following ISMA resolution for the second time prior to its being resubmitted and voted on by the 1989 House of Delegates. The language is contained in **Resolution 88-5 (Discrepancies in Definition of "Officers")**, introduced last year by the Commission on Constitution and Bylaws. The resolution was referred to Reference Committee 2 and was subsequently "adopted" by the 1988 House of Delegates. It was published for the first time in the January 1989 issue of INDIANA MEDICINE, pages 53 and 54. The resolution follows:

Whereas, the ISMA Constitution, Article VI, Officers, specifies that, "The general officers of the Association shall be a President, President-elect, Immediate Past President, Treasurer, Assistant Treasurer, Speaker, Vice Speaker, Trustees, and the Executive Director;" and

Whereas, the Constitution, Article VI, does not include Alter-

nate Trustees; and

Whereas, Bylaws Section 4.01, Composition, specifies that "The officers of this Association shall be a President, President-elect, Immediate Past President, Treasurer, Assistant Treasurer, Speaker, Vice Speaker, and the Executive Director;" and

Whereas, Bylaws Section 4.01, does not include Trustees (as specified in Article VI of the Constitution) nor does it include Alternate Trustees; therefore be it

RESOLVED, that Article VI, Officers, of the ISMA Constitution be amended as follows:

"The ~~general~~ officers of the Association shall be a President, President-elect, Immediate Past President, Treasurer, Assistant Treasurer, Speaker, Vice Speaker, Trustees, Alternate Trustees, and the Executive Director."

and be it further

RESOLVED, that Bylaws Section 4.01, Composition, be amended as follows:

"The officers of this Association shall be a President, President-elect, Immediate Past President, Treasurer, Assistant Treasurer,

Speaker, Vice Speaker, Trustees, Alternate Trustees, and Executive Director, each of whom shall be a member, except the Executive Director, who need not necessarily be either a physician or a member."

and be it further

RESOLVED, that Constitution Article V, House of Delegates, in order to be consistent with the above-mentioned Article VI and Section 4.01 be amended as follows:

"The legislative and policy-making body of the Association is the House of Delegates composed of elected representatives and others as provided in the Bylaws. The House of Delegates shall transact all business of the Association not otherwise specifically provided for in the Constitution and Bylaws and shall elect the ~~general~~ officers of the Association, except Trustees, Alternate Trustees, and the Executive Director, as otherwise provided in the Bylaws." ▢

Code:

underlined = addition

strike-through = deletion

How joining an HMO or PPO can harm your practice

Randolph W. Lievertz, M.D.
Indianapolis

In the December 1988 issue of *INDIANA MEDICINE*, an article appeared by Thomas Moran, M.D., titled "How Joining an HMO or PPO Can Benefit Your Practice." Several aspects of HMOs/PPOs must be considered.

Most HMOs/PPOs in effect use physicians as their employees to deliver health care. Physician-employees are paid a capitation (monthly salary) for their services. The HMO/PPO usually lists the physician as an independent contractor in an attempt to avoid an employer/employee relationship when it comes to liability. Furthermore, the HMO/PPO requires a physician to sign a contract with a hold-harmless clause protecting the HMO/PPO from liability from acts of the physician, even though the acts may be a direct consequence of policies established by the HMO/PPO.

Most HMOs/PPOs also require a withholding on the capitation paid to the physician. This withholding, in effect, finances the HMO/PPO if it sells its product at a cost below that required to provide the medical care offered. It is interesting that the administrators of the HMO/PPO have no withholding of their salary or benefits even if they sell the plan at an unreasonably low cost to the employer. If the plan fails to break even, the entire financial burden falls on the physician rather than on the administrative

policies that they make and enforce.

An ideal situation for physicians enrolling in an HMO/PPO would be a contract without a hold-harmless clause. The physician should have a hold-harmless clause from the HMO/PPO that offers protection from any liability stemming out of the policy decisions made by the administrative staff of the HMO/PPO. The contract should stipulate that the physician is an employee of the HMO/PPO. The administrative staff of the plan should have a withholding of its salaries and benefits equal to the withholding imposed on the physicians. Therefore, if the plan is sold at less than its cost, the administrative staff will suffer a financial burden equal to the burden suffered by the physicians. There is no reason for physicians to subsidize these plans.

Most HMOs/PPOs set their capitation so a physician must have 500 to 1,000 patients from that plan to break even. Few HMOs/PPOs can guarantee physicians sufficient numbers of patients to break even. If physicians experience a bad patient mix (which is not unreasonable considering the patients who often sign up for these plans), they may lose thousands of dollars out of their own pockets.

The plan should guarantee that the physician at least will break even. Should the physician experience an adverse patient mix, the physicians out-of-pocket expense should not exceed the total income from the HMO/PPO. Once that point is reached, all additional costs are borne by the HMO/PPO.

Another improvement would be for the HMO/PPO to contract

with the physician to pay a set fee for each CPT procedure code billed by the physician. Each code would have a separate fee just like the Medicare and Medicaid contracts. This would put the burden of expenses on the HMO/PPO and require that they sell the plan to an employer at the true cost of the plan rather than underpricing it in such a manner that physicians are required to subsidize the plan through withholding of a portion of the capitation payment. Savings to the plan would still come from the primary care physician's acting as the patient care coordinator and requiring all consultations, emergency room visits and surgeries to be authorized by the primary care physician.

In joining an HMO/PPO, the physician may have greater control over the patient's health care and referrals, but the physician has a negative financial incentive in making referrals. Each referral puts the physician at greater financial risk. Ethically, is financial disincentive reasonable?

A point was made in Dr. Moran's article that HMOs/PPOs help promote the practice through advertising. The promotion usually is a listing in a directory, which is sent only to the HMO/PPO subscribers. This is hardly advertising to the general public.

In a hypothetical example, 20% of a physician's patients may work for a large company. The company may offer an HMO/PPO insurance and all 20% of the physician's patients may join. Physicians who are part of the HMO/PPO may keep their patients but may lose several thousands of dollars in providing their care. Physicians who are not part

(continued on page 477)

Holistic medicine

Richard J. Noveroske, M.D.
Newburgh, Ind.

The other night at a medical staff meeting the announcement was made that Medicare rules will require more and more data – clinical findings, supportive x-ray and laboratory findings, diagnoses and records of treatments – for each patient as Medicare tries to move toward holistic medicine or a working definition of it.

I bit my tongue and said nothing while others discussed the merits of practicing holistic medicine or medicine aimed at taking care of the complete or whole person. Then, I could keep still no longer.

"We are created in God's image,

and God is infinite," I said. "How can you define, diagnose, analyze and fully treat variations that are infinite? There is a touch of the Infinite in each of us."

Another physician took exception to my statements and said I was just constructing a tautology – a meaningless repetition in close succession of an idea or a word.

"Not so," I said. "I've seen the ceiling of the Sistine Chapel." Michaelangelo's painting of God creating man in his own image is one of the most moving paintings I've seen. I think it was divinely inspired.

Oh sure. We can create paper mills to endlessly pursue infinity in almost any endeavor. And it is done until the business goes bankrupt, or the boss is fired.

The engineers speak of this as "six sigma to infinity." Ninety-nine percent of the data is usually found in three sigmas or three standard deviations to either side of the midline or the median. When you start pursuing the remaining 1% of the data outside the six sigmas or three sigmas on either side of the median down in the toes of the bell-shaped curve, you spend more and more time and effort for less and less. It gets expensive.

Good medicine? I'm for that. But, to try to analyze, diagnose and treat all of the infinite variations that are present in every one of us is absurd.

Who pays for this absurd pursuit of the infinite in medicine? Well, you know. □

Joining an HMO or PPO

(continued from page 476)

of the HMO/PPO lose their patients but do not lose the thousands of dollars out of their own pockets.

Several patients may continue to see their physicians even though they are not part of the HMO/PPO. In which instance is the physician better off?

I believe that HMOs/PPOs must come a long way before they are truly helpful to medical practices or to patients. My personal experience is that many physicians do not provide the same quality and quantity of care to HMO/PPO patients that they do to private-paying patients. I believe this is a direct result of the policies and burdens placed on physicians by HMOs/PPOs, and their failure to adequately reimburse physicians for their services. □

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WHO: All ISMA members

WHAT: 140th Annual ISMA Convention

WHEN: Oct. 27-29, 1989

WHERE: Westin Hotel in downtown Indianapolis

- In addition to the annual meeting of ISMA's House of Delegates, other special programs have been planned.
- ISMA again will host a theme reception Friday between reference committee meetings. This year's theme is a "Hawaiian Luau," featuring special entertainment and cuisine.
- Another highlight will be the General Education session at the Indiana Medical History Museum with a special presentation from "Dr. Campbell" of "Prairietown, Ind."

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William M. Dugan, M.D.
Indianapolis

The American Cancer Society predicted that 14 of 38 types of cancer will result in increased deaths in 1989. The society predicts fewer deaths in the following cancer sites: stomach, rectum, larynx, uterine, cervix, bladder, thyroid and four types of oral cancer. For 11 other forms of cancer, the 1989 estimates remain unchanged from a year ago.

The report in *Cancer Facts and Figures* predicts that 1.01 million Americans will have a cancer diagnosis this year. More than 500,000 will be diagnosed with nonmelanoma skin cancers or carcinomas in either the uterine cervix or the breast. Because both forms of cancer respond well to minimal treatment, they generally are not included in overall cancer incidence statistics.

Relative five-year survival rates for the years 1960 to 1963 and 1979 to 1984 indicate that between the two periods, the survival rates for all forms of cancer improved from 39% to 50% for whites and from 27% to 37% for blacks.

The breast cancer survival rates rose to 75% for whites and 62% for blacks. These numbers mirror the experience in Indiana. The increased use of mammography and the change in treatment of breast cancer have lead to the improved statistics.

The lung cancer survival rates, while having shown slight im-

provement, have continued with survival rates ranging from 11% to 13%.

The report also noted that almost one of every five deaths in the United States (a total of 390,000) will be cigarette-related, and approximately one-third of all cancer deaths are caused by tobacco. Five of six lung cancer cases are related to smoking.

There will be 502,000 cancer deaths in the United States this year. It is believed that 178,000 of these could be avoided with earlier diagnosis and treatment.

The Leukemia Society of Indiana sponsors an active patient aid program featuring much more than financial assistance. On the first Thursday of each month, a family support group meeting is held at St. Luke's United Methodist Church in Indianapolis. Patients, families and significant others are encouraged to discuss their concerns.

The group is led by Vicki Kennedy, A.C.S.W., and Leslie Lude-man, A.C.S.W. For further information about this group or other services the Leukemia Society offers, call (317) 924-9898 or write Leukemia Society of Indiana, 1800 N. Meridian St., Suite 101, Indianapolis, IN 46202.

The Little Red Door of Indianapolis recently awarded the Planned Parenthood organization \$8,000 for its breast cancer screening projects in Indiana. Planned

Parenthood conducts the breast self-examination service for women who use Planned Parenthood clinics. The program was expanded in January 1989 to include mammography services and referrals for those who need further evaluation.

The 15th Annual Conference of the National Tumor Registrars Association, Inc., will be held in Baltimore. This year's conference will focus on the changing roles of the cancer registry in U.S. hospitals. The organization is recognizing its expanded role in data collection for more than clinical purposes. Topics to be discussed include "Using Registry Data to Support Grant Proposals" and "Innovative Uses of Cancer Registry Data for Quality Assurance Monitoring."

With the passage of the state law requiring cancer cases to be reported to the Indiana State Tumor Registry, it was recognized that more and better data are needed in the ongoing war against cancer.

By using this information to track survival, we can create the needed screening and educational programs for different populations. □

If you have cancer-related meetings or information you would like to share with peers, send it to William M. Dugan, M.D., 11 S. Meridian St., Suite 711, Indianapolis, IN 46202.

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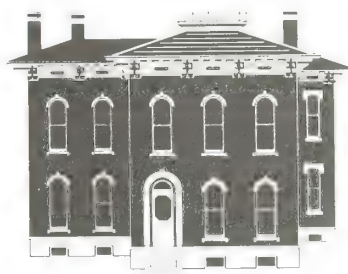
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All diplomates of the ISMA are invited to enter a professional card in the directory.

■ news briefs

Stress brochure available

Because more than 90% of headaches are due to stress, the Pain and Headache Information Center has published a new brochure, titled "Handling Stress Headaches." The brochure outlines successful techniques to alleviate headache pain without medication, including biofeedback, physical therapy and self-relaxation exercises. To obtain a free copy of the brochure, write Director, Cranio-facial Pain Center, 1847 Old York Road, Abington, PA 19001, or call 1-800-543-PAIN.

AAPM issues 1989 directory

The American Academy of Pain Medicine (AAPM) has announced the publication of its 1989 membership directory. The academy also announced the date of its annual conference, which will be Nov. 3 and 4 at the Grand Kempinski Hotel in Dallas.

Symposium to discuss cancer

"Cellular and Molecular Targets of Cancer Therapy" is the topic of the 42nd Annual Symposium on Fundamental Cancer Research sponsored by the University of Texas M.D. Anderson Cancer Center. The symposium will be Oct. 24 through 27 at the Stouffers

Greenway Plaza Hotel in Houston. Topics include plasma membrane targets, the nucleus as Target I, cytoplasmic targets, the nucleus as Target II and non-malignant targets. For more information, contact the Office of Conference Services, M.D. Anderson Cancer Center, 1515 Holcombe Blvd., Houston, TX 77030 - (713) 792-2222.

Entries needed for awards

Entries are now being accepted for three 1989 *Patient Care Awards* for Excellence in Patient Education. One award is given to a family physician or other primary care physician in private practice. The second award is given to a family practice residency program whose commitment to excellence in patient education has produced an innovative program for teaching patient education skills to residents. The third award is given to patient educators with a minimum of three years' experience in primary care, except physicians and registered nurses.

Winners will receive a plaque and \$750 at the 11th Annual Conference on Patient Education Nov. 16 through 19 at the Buena Vista Palace in Orlando, Fla. To recommend a doctor for this award,

contact Barbara Widmar, 8880 Ward Parkway, Kansas City, MO 64114-2797 - 1-800-274-2237 ext. 5530. Applications are due July 1.

Medicaid manuals mailed

ISMA members should have received their newly revised Indiana Medicaid provider manuals. The manual, dated September 1988, contains a newly printed regulation, section 470 IAC 5-8. Portions of this section were omitted in the 1986 manual, dated March 1986.

The entire 470 IAC 5-8 section should be paired with 470 IAC 5-9, which was included in the March 1986 provider manual. 470 IAC 5-8 and 5-9 will give providers a complete set of Medicaid regulations.

The Medicaid Department soon will publish a provider bulletin, informing all Medicaid providers of this information. If you have questions, call (317) 841-3979 or 1-800-382-4611.

Consumer brochure available

The Proprietary Association (PA), a 108-year-old trade association representing nonprescription drug manufacturers, and the U.S. Food and Drug Administration have jointly developed a consumer brochure, *A Doctor's Advice on Self-Care*, which is being distributed nationwide by the U.S. Consumer Information Center in Pueblo, Colo.

Authored by FDA Commissioner Frank E. Young, M.D., Ph.D., the brochure offers tips to consumers about taking nonprescription medicines properly. The brochure is available free of charge. To order, write the Consumer Information Center, Dept. 588-V, Pueblo, CO 81009. □

Lukemeyer vies for AMA seat

George T. Lukemeyer, M.D., Indianapolis, is a candidate for re-election to the AMA Council on Medical Education. The election will be held during the AMA annual meeting June 18 through 22 in Chicago.

Dr. Lukemeyer will complete his first three-year term on the council this month. Council members can serve a maximum of three terms.

Nine people, including three incumbents, are vying for four council seats.

Dr. Lukemeyer, an ISMA past president, is executive associate dean of the Indiana University School of Medicine and medical director of Indiana University Hospitals. He also is an ISMA delegate to the AMA.

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Dr. Deborah I. Allen, an Indianapolis family practitioner, has been appointed chairman of the Department of Family Medicine at the Indiana University School of Medicine; she has been an associate professor and a director of undergraduate family practice education since 1986.

Dr. Shokri Radpour, a part-time clinical professor at the Indiana University School of Medicine, has been appointed chief of the ENT Section at the Richard L. Roudebush Veterans Administration Medical Center in Indianapolis. He serves as president-elect of the American Neurotology Society and as vice president of the Triological Society Middle Section and last month, was elected as a member of the American Otological Society. Dr. Radpour has relocated his practice to Indianapolis after practicing for 26 years in Kokomo.

Dr. Stephen W. Perkins, an Indianapolis plastic surgeon, was guest lecturer at a facial plastic surgery course for Mexican physicians in Morelia, Mexico. He also was a contributing author for an article appearing in the February issue of *Archives of Otolaryngology Head and Neck Surgery*.

Dr. Adel H. Ayoub, an anesthesiologist at Methodist Hospital in Merrillville, attended the Ninth International Symposium on Intensive Care and Emergency Medicine in Brussels, Belgium, March 21 through 24.

Dr. Randolph W. Lievertz, an Indianapolis family practitioner, lectured to physicians in McKeesport, Pa., on "Current Ad-

vances in the Treatment of Complications of Menopause." He also lectured to physicians in Auburn, Ind., on practical information in the treatment of arthritis.

Dr. Scott A. Green, a second-year resident in the Community Hospital Family Practice Residency Program, is one of 20 U.S. recipients of the Mead Johnson Award.

Dr. Destry W. Lambert of Tipton was reappointed to the Tipton County Memorial Hospital Board by the Tipton County commissioners.

Dr. George B. Zeiner, a Lafayette physician specializing in aerospace medicine, has been appointed medical director of Home Hospital's occupational medicine services.

Dr. Gerhard M. Grieser, an Evansville neurosurgeon, has been named president of the medical staff executive committee for Tri-State Regional Rehabilitation Hospital. Other officers are **Dr. Mark C. Jones**, an Evansville neurologist, vice-president; **Dr. Kenneth D. Davis**, an Evansville orthopedic surgeon, president-elect; **Dr. Howard E. Burg**, a Newburgh internist, secretary-treasurer; and **Dr. Ronald W. Sowa**, an Evansville orthopedic surgeon, medical director.

Dr. Philip G. Bowser, a Goshen general practitioner, retired from practice April 21.

Dr. John L. Swarner Jr., a Valparaiso internist, has been named Physician of the Year by the Visiting Nurse Association of Porter County.

Dr. James A. Berndt, a family practitioner and anesthesiologist, was elected president of the medical staff at Community Hospital in

Bremen.

Dr. Craig A. Moorman, a Franklin pediatrician, was named Johnson County Health Officer.

Dr. Tae G. Kiehm, a Mishawaka physician, was elected to a two-year term on the Hospice of St. Joseph County.

Dr. Robert M. Maurer, a retired Brazil physician, was inducted into the Brazil Times Carrier Hall of Fame; he was a carrier for *The Times* from 1930 to 1934 before becoming a doctor.

Dr. Douglas A. Triplett, a Muncie physician, has been named vice-president and director of medical education at Ball Memorial Hospital.

Dr. J. Kent Guild, a Plymouth family practitioner, has been named president of the medical staff of Holy Cross Parkview Hospital. Other officers are **Dr. Lloyd C. France**, a Plymouth general surgeon, president-elect, and **Dr. Rod S. Kubley**, a Plymouth family practitioner, secretary-treasurer.

Dr. Mohammad Arshad, a Merrillville psychiatrist, has been appointed medical director of the Substance Abuse Services at Kingwood Hospital in Michigan City.

Dr. Lance R. Seagren, a Lafayette physician, has been appointed medical director of Home Hospital's Paramedic and Ambulance Division.

Dr. Umamaheswara R. Kalapatapu, a Logansport psychiatrist, was named acting executive director of the Four County Counseling Center.

Dr. Nicki C. Turner, a Muncie internist, received a Women of Achievement Award from the East Central Indiana Chapter of Women in Communications. □

New ISMA members

Ishwara M. Bhat, M.D., Niles, Mich., cardiovascular diseases.

Michael A. Blood, M.D., Crawfordsville, family practice.

James S. Dunnick, M.D., Lafayette, cardiovascular diseases.

Cheryl B. Goynes, M.D., Valparaiso, obstetrics and gynecology.

David P. Gray, M.D., Columbus, oncology.

James H. Hart, M.D., Pine Village, family practice.

Badr A. Ishak, M.D., Valparaiso, anesthesiology.

Joel H. Mayer, M.D., Vincennes, anatomic pathology.

Thomas L. McCaffrey, M.D., Richmond, anatomic and clinical pathology.

Monte G. McKerrigan, M.D., Kokomo, obstetrics and gynecology.

Ward M. Neff, M.D., Evansville, internal medicine.

Mark E. O'Brien, M.D., Kokomo, pediatrics.

Evelyn M. Pauly, M.D., Fort Wayne, dermatology.

Thaddeus H. Pope, M.D., Crawfordsville, otolaryngology.

Charles E. Sanders Jr., M.D., Muncie, rheumatology.

Carlyle Schlabach, M.D., South Bend, family practice.

Mark L. Smucker, M.D., South Bend, cardiovascular diseases.

Bradley J. Strausburg, M.D., Jasper, anesthesiology.

James M. Sutton, M.D., Lafayette, nephrology.

Albert P. Tomchaney, M.D.,

South Bend, family practice.

Myrna D. Trowbridge, D.O., Valparaiso, general practice.

Residents

James A. Balko, M.D., Indianapolis, anatomic and clinical pathology.

Marc E. Duerden, M.D., Indianapolis, physical medicine and rehabilitation.

Thimjon C. Ferguson, M.D., Evansville, family practice.

Roger A. Piatek, M.D., Indianapolis, family practice.


Linda V. Spencer, M.D., Crawfordsville, dermatology.

Sue Ann Strayer, M.D., Indianapolis, anatomic and clinical pathology.

Vivien O. Tucker, M.D., Evansville, family practice. □



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■ obituaries

Leander A. Malone, M.D.

Dr. Malone, 86, a Terre Haute radiologist, died April 9 at Southwood Health Care Center in Terre Haute.

He came to Terre Haute after graduating in 1928 from Washington University Medical School in St. Louis. He was an active member of the staffs of Union Hospital in Terre Haute and Putnam County Hospital in Greencastle.

Dr. Malone, a long-time friend of the Boy Scout organization, received the Boy Scout Silver Beaver award in the 1940s and the Silver Buffalo award in the late 1960s.

Leon Nazarian, M.D.

Dr. Nazarian, 33, a Muncie radiologist, died March 6 in Ball Memorial Hospital.

He was a 1979 graduate of Northwestern University School of Medicine and practiced in Ohio four years before coming to Muncie in 1987.

Dr. Nazarian was a member of the Blackford-Delaware County Medical Society, the American College of Radiology and the Radiological Society of North America.

Knight L. Kissinger, M.D.

Dr. Kissinger, 82, Steuben County Health Officer, died Feb. 21 in his Angola home.

He was a 1940 graduate of the Indiana University School of Medicine. Dr. Kissinger also was an Army veteran of World War II and helped organize the old Elmhurst Hospital in Angola in 1947.

Dr. Kissinger is believed to have held the position of Steuben County Health Officer longer than any other health officer in Indiana.

William C. Kunkler, M.D.

Dr. Kunkler, 96, a retired Terre Haute surgeon, died March 8 in Meadows Manor East Nursing

Home in Terre Haute.

He received his medical degree in 1917 from the University of Louisville and was commissioned a medical officer in World War I.

He joined the staff of St. Anthony Hospital in Terre Haute in 1920. Dr. Kunkler, who practiced medicine more than 50 years, taught anatomy and physiology for 21 years at the St. Anthony School of Nursing and was former chief of surgeons at St. Anthony Hospital. He was a member of the ISMA Fifty Year Club.

George F. Slama, M.D.

Dr. Slama, 72, a retired Crown Point physician, died April 11.

He was a 1941 graduate of the Loyola University School of Medicine in Chicago and an Army veteran of World War II.

Dr. Slama practiced medicine in the Gary area for more than 40 years before retiring in 1983. He was a member of the American Academy of Family Physicians. □

In memoriam: Donald E. Wood, M.D.

Dr. Donald E. Wood, 79, a retired Indianapolis internist who was president of the Indiana State Medical Association from 1963-1964, died Feb. 1 at his home.

A 1935 graduate of the Indiana University School of Medicine, Dr. Wood was an Army veteran of World War II. He was a former professor of medicine and former chairman of postgraduate education and medical economics at the I.U. School of Medicine and had served as president of the Marion County Medical Society.

Dr. Wood was a member of the American Medical Political Action Committee Board from 1961 to



Dr. Donald E. Wood

1971 and served as AMPAC chairman from 1963-1964. He was a member of the American Medical Association's Board of Trustees from 1971 to 1974 and had been an ISMA delegate to the AMA.

He was a member of the AMA Council on Legislative Activities from 1960 to 1970 and council chairman from 1969 to 1970.

He received an honorary doctorate in science from Butler University in 1971 and the Vital Award from the Marion County Chapter of the American Heart Association in 1982. A member of the ISMA Fifty Year Club, he retired in 1988 after 52 years of practice. □

When people disagree

Arthur R. Pell, Ph.D.
Consultant, Dale Carnegie & Ass.

People disagree for many reasons. Sometimes they are logical—legitimate differences of opinion. Other times, they are emotional—the people involved have strong feelings about the matter under consideration or about each other. The job of the manager is to resolve the differences so the job can get done.

When Karen Harding delegated a special project to Jack and Jacqueline she was faced with a serious disagreement between them as to how the project should be pursued. Each of them had ideas about which they had strong feelings. Karen had to overcome the differences or the job would not be accomplished. A manager can settle differences between his or her people in one of two ways: arbitration or mediation. In arbitration, the manager listens to both parties and then makes the decision as to what course will be followed. In mediation, the manager tries to help the conflicting parties reach a meeting of the minds. Each approach has its advantages and limitations. Arbitration takes less time and time may be important, but it is an arbitrary decision and may be unsatisfactory to both of the subordinates. Mediation, although time consuming, encourages the participants to think things out and come to a mutually agreeable solution. When the people involved in a disagreement are encouraged to work out their own solutions, both are more likely to accept the decision. It also serves as a learning experience and helps participants grow in their knowledge and job capability.

How did Karen mediate the problem between Jack and Jacqueline? As soon as she became aware of the disagreement, she called both of them into her office and told them that she would help them reach an accord. She then outlined the process that she would use. Both parties must be aware of the process of conflict resolution to obtain best results.

Once the ground rules are discussed and accepted, Karen asked Jack to present his view of the situation. Now you might think that after he does this, Jacqueline is given a chance to tell how she sees the problem, but there is an intermediary step. Jacqueline is asked to restate Jack's view. This is a key factor in successful mediation. Unless each person fully understands how the other views the problem it is not possible to come to any mutual understanding. If Karen had skipped this step and asked Jacqueline to tell her side of the story instead of reviewing Jack's comments, what do you think might happen? While Jack was making his statement, Jacqueline probably would have only listened with half of her attention: the other part of her brain would be concentrating on what she could say to rebut Jack's arguments. By requiring a review of the other party's argument, it forces each party to really listen to the other.

After Jack has agreed that Jacqueline's interpretation of his view is correct, Jacqueline states her concept of the problem and Jack indicates how he sees her viewpoint. Once Karen is assured that both are looking at the problem in the same way, she can go to the next step: listing the areas of agreement and disagreement.

In most situations there are many more aspects on which the conflicting parties agree than disagree. By listing these items on a pad, the areas of agreement can be rapidly disposed of and the parties can concentrate on those matters that must be resolved.

With Karen's guidance, Jack and Jacqueline work out their differences on each point. As no manager has unlimited time for any one problem, a time limit should be set for this meeting. If all of the points are not settled by the end of the meeting, another meeting may be scheduled. The amount of time devoted to mediating any one disagreement depends on the urgency of the situation and the demands on the time of the manager and each of the participants. After every effort is made to mediate in the time frame scheduled, there may still be some items on which agreement has not been reached. In this case, Karen will have to arbitrate these issues: arbitration is a last resort—only used when mediation fails.

Now let's look at conflicts caused by emotional rather than logical reasons. If the reason for the dissension is a deep-seated anger or resentment, there is not much one can do. In the struggle for advancement or power within an organization there are some people who may stab others in the back to gain an advantage. It is unlikely one can ever persuade the stabber to like the stabber.

However, in most situations the dislike is not deep-seated, but is caused by misunderstandings or intangible and vague adverse reactions to the other person.

Larry was concerned about the lack of team spirit in his department. There was constant bickering and occasional flare-ups among his people. After attending a workshop, part of the Dale Carnegie® Professional Development Series, Larry called a meeting to apply one of the ideas he picked up. After a brief "warm-up" talk on the importance of team work on their job, Larry asked each of the six people in his group to write the names of the other five on a pad he provided and to write next to each name what they liked best about that person. Then he had each person read what he or she had written looking at that individual while reading the statement.

Carl looked at Marie and read: "When I ask you for information or help, no matter how busy you are, you stop and give me what I need." As Carl had never once thanked her or acknowledged that her help was appreciated, Marie had looked upon Carl as an ungrateful pest. Now she began to feel more positive about him.

Lil told Ron: "When I come in in the morning, I'm grumpy. You always make me feel better by your cheery 'Good Morning'." Ron knew Lil was "a grump" and didn't like to deal with her. This acknowledgement made him feel better about her.

When the participants return to their work, each has more positive feelings about their co-workers. It is difficult to dislike somebody who has just said something nice about you. The results can be enhanced if the manager keeps alert to the interactions of his/her people. When a nasty remark about a person is made by another member of the group, the manager should remind the offender of the compliment given to that person by that other employee at the meeting. This reinforces the effect of the meeting and clears the air reestablishing the good will that had been created.

Pocket/purse size reprints may be purchased (10 for \$10.00) or (25 for \$20.00) from Dale Carnegie & Associates, Inc. 1475 Franklin Avenue, Garden City, N.Y. 11530

classifieds

PEDIATRIC PARTNER NEEDED - Community: Small town atmosphere, populous drawing area. School: National honors. Cultural: University town, 50 miles from Chicago. Economics: Greatest per capita income in state. Malpractice: Lowest rates in nation. Pediatric practice: 25 years, still expanding. Office: Spacious suite in four-year-old medical building, other specialties associated, lab and x-ray. Hospital: All services, superior neonatal unit. Send CV and practice goals to: Thomas J. Covey, M.D., F.A.A.P., 2101 Cornford Road, Suite 3, Valparaiso, IN 46383.

BC/BE FAMILY PRACTICE physician wanted to join young aggressive three-man family practice group with strong interest in obstetrics. We are located in a pleasant and progressive university community in north central Indiana. This is an excellent opportunity for the proper physician. Competitive salary and benefits. Please forward CV to: Lafayette Family Physicians, 2323 Ferry St., Suite 205, Lafayette, IN 47904.

POSITION AVAILABLE with thriving three-clinic urgency care corporation. Practice heavily emphasizing industrial, sports medicine and wellness programs. Package of \$85,000 plus additional profit-sharing for 42-hour work week. Part-time ER work available in addition. Contact Dr. Dean Elzey, (219) 489-2772.

40-YEAR FAMILY PRACTICE with building for sale. Two excellent hospital facilities near. Call: (317) 643-3565 or (317) 644-5073, Anderson, Ind.

PHYSICIAN WANTED - Position available for a licensed physician. Convenient four-day work week. Please contact Greg Edwards, American Plasma, 515 Lincoln Way West, South Bend, IN 46601, (219) 234 6012 or (219) 272-0769.

MEDICAL DIRECTOR - Position available in progressive JCAHO-accredited CMHC that serves and has locations in northern Indianapolis and two adjacent counties. This area is part of a carefully planned, attractive suburban community that features quality homes and condominiums. It has some of Indiana's best shopping and recreational facilities, cultural offerings and outstanding private and public schools. Center provides comprehensive services including outpatient, 30-bed inpatient unit, partial hospitalization, residential programs, emergency services and consultation and education using a multidisciplinary staff. Duties include supervision of associate director and a six-physician medical team, plus responsibility for medical and clinical care. Candidate must be board certified or board eligible and should hold or be eligible for a current Indiana license. Salary \$100,000+ with excellent fringe benefit package. E.O.E. Send resume to: Marilyn Levinsky, Tri-County Mental Health Center, Inc., 8945 N. Meridian St., Indianapolis, IN 46260.

FAMILY PRACTICE - Acute care facility in central Iowa seeks family practitioner to join group. Thriving practice. Two clinics with strong hospital support. Call coverage and backup excellent. Obstetrics required. Hospital and clinics well-equipped and have spacious facilities. Desirable community. Offering competitive income and benefits. Call Michael Krier, 1-800-332-0488.

ITEMS FOR SALE: ATL 4000 S/L and Ultramark IV ultrasound units. Both almost new. Fully equipped, all accessories. Complete medical library. More than 30 journal titles from the past 10 years, bound. Books, shelves, fixtures. Topaz line conditioner 25/40. Mark IV sigmoidoscopy table. EMI CT unit. Will deliver. Call (502) 825-8375.

FOR RENT - Doctor's office. 1,300 square feet. Heat furnished. Ideal for specialist or GP. Excellent parking. Rensselaer, Ind. Call Dr. T. Henley, (219) 866-7552.

CENTRAL INDIANA - Full or part-time emergency medicine position available immediately. BE/BC in family practice, internal medicine or emergency medicine. 80-bed hospital with approximately 7,000 visits annually. Located 25 miles from Indianapolis on major interstate. Paid malpractice. Contact: M.P. Forkin, M.D., Witham Memorial Hospital, P.O. Box 1200, Lebanon, IN 46052, (317) 482-8667.

FAMILY PRACTICE - Hospital-sponsored clinic opportunity. Dynamic, growth-oriented hospital in beautiful north central Wisconsin is seeking two family physicians for a new clinic facility currently being constructed. The administrative burdens of medical practice will be minimized in this hospital-managed clinic. The hospital has committed to an income and benefit package that is significantly higher than similar opportunities. Package includes base income, incentive bonus, malpractice, disability, signing bonus and student loan reduction/forgiveness program. All relocation costs will be borne by the hospital. Please contact: Dan McCormick, President, Allen McCormick, France Place, Suite 920, 3601 Minnesota Drive, Bloomington, MN 55435, (612) 835-5123.

FAMILY PRACTICE OPPORTUNITY - BC/BE; north central Indiana; flexible ER schedule for fully accredited county hospital in return for exceptional income, opportunity to set up own zero overhead practice, comprehensive benefits with all factors negotiable to meet specific practitioner needs. Send CV or contact collect: James Wyatt, Corporate Staffing Resources, 420 S. Fourth St., Elkhart, IN 46516 - (219) 522-2396.

IMMEDIATE CARE PHYSICIANS

WANTED - Need to be trained and/or experienced in areas of medicine that deal with acute/urgent care, such as minor trauma, acute illnesses and injuries and physical exams in all age groups. No hospital work. Greater Indianapolis area. Well-known group. Good salary/fringe benefit package. Contact: Michael D. Bishop, M.D., FACEP, Emergency Care Physicians, 640 S. Walker St., Ste. A, Bloomington, IN 47401 - (812) 333-2731.

CENTRAL INDIANA - Physician-owned emergency group accepting applications for full-time, career-oriented emergency physicians. Flexible work schedules and excellent benefit package. Part-time and directorship positions also available. Send CV or contact Sherry Bussel, Midwest Medical Management, Inc., 528 Turtle Creek, North Drive, Suite F-4, Indianapolis, IN 46227 - (317) 783-7474.

FAMILY PHYSICIAN, general practitioner or internist wanted to join three-man group in west central Indiana. Competitive salary and percentage arrangement. Partnership arrangement possible after one year. Contact Frank Swaim, M.D., Parke Clinic, 503 Anderson St., Rockville, IN 47872; (317) 569-3182.

INTERNIST - Indianapolis practice. Seeking internist with an interest in geriatrics. Excellent salary and benefits including CME and malpractice. Flexible scheduling. CV to Judy Burnett, 4930 N. Pennsylvania, Indianapolis, IN 46205.

GENERAL SURGEON, BE/BC to join me in my solo general surgery practice. Small town (7,000) in northeast Indiana. A great lake area, good place to rear a family. Would be nice if you shared my interests in aviation. Send CV to Joseph A. Greenlee Jr., M.D., F.A.C.S., 439 Water St., Kendallville, IN 46755 or call (219) 347-3093, home, or (219) 347-2231, office.

ILLINOIS - Great opportunity for an experienced emergency physician to join a career emergency group practicing in western and southwestern suburbs of Chicago. Please contact Debbie Aber (312) 327-0777 or send your CV to: Emergency Medicine S.C., 2142 N. Sedgwick St., Chicago, IL 60614.

INDIANA - Excellent opportunity for an experienced physician to join a career emergency group practicing in northwestern Indiana near Chicago. Please contact Debbie Aber (312) 327-0777 or send your CV to: Emergency Medicine S.C., 2142 N. Sedgwick St., Chicago, IL 60614.


INTERNIST BE/BC - North Shore Internal Medicine, PC is seeking an energetic general internist to enjoy the benefits of a rapidly expanding practice. New office close to hospital. Michigan State Medical School Campus. Send resume to 2420 First Ave. South, Escanaba, MI 49829 - (906) 786-1563.

PEDIATRICIAN, RICHMOND - To join five-person group. Excellent opportunity. Pediatric Center, 1434 Chester Blvd., Richmond, IN 47374. (317) 966-5527.

BOARD CERTIFIED radiologist in his early 30s, trained in all modalities, wishes to relocate to the Midwest. Prefers solo or at most two-man group with one or more busy hospitals who have MR or potential for it along with the usual diagnostic modalities. Licensed in Illinois, Kentucky and Indiana. Call (502) 825-8375.

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EMERGENCY PHYSICIAN - Excellent opportunity for experienced emergency physician. Full-time position available in three-man group expanding to four. Guaranteed rate of compensation. Malpractice insurance provided. 150-bed hospital with 15,000 ER patients per year. C/O Mark G. Doyle, M.D., 1000 N. 16th St., New Castle, IN 47362 - (317) 521-1159.

INTERNIST/OR INTENSIVIST: BC/BE to join a busy three-man practice with special interest in hospital intensive care, plus consultative and primary care practice in the Indianapolis area. Will offer partnership. Position available immediately. Reply: Box 19616, Indianapolis, IN 46219. 

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VASOTEC®

(ENALAPRIL MALEATE | MSD)

Contraindications: VASOTEC® (Enalapril Maleate, MSD) is contraindicated in patients who are hypersensitive to this product and in patients with a history of angioedema related to previous treatment with an ACE inhibitor.

Warnings: **Angioedema** Angioedema of the face, extremities, lips, tongue, glottis, and/or larynx has been reported in patients treated with ACE inhibitors, including VASOTEC. In such cases, VASOTEC should be promptly discontinued and the patient carefully observed until the swelling disappears. In instances where swelling has been confined to the face and lips, the condition has generally resolved without treatment, although antihistamines have been useful in relieving symptoms. Angioedema associated with laryngeal edema may be fatal. **Where there is involvement of the tongue, glottis, or larynx likely to cause airway obstruction, appropriate therapy, e.g., subcutaneous epinephrine solution 1:1000 (0.3 mL to 0.5 mL), should be promptly administered.** (See ADVERSE REACTIONS.)

Hypotension Excessive hypotension is rare in uncomplicated hypertensive patients treated with VASOTEC alone. Heart failure patients given VASOTEC commonly have some reduction in blood pressure, especially with the first dose, but discontinuation of therapy for continuing symptomatic hypotension usually is not necessary when dosing instructions are followed; caution should be observed when initiating therapy. (See DOSAGE AND ADMINISTRATION.) Patients at risk for excessive hypotension, sometimes associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death, include those with the following conditions or characteristics: heart failure, hyponatremia, high-dose diuretic therapy, recent intensive diuresis or increase in diuretic dose, renal dialysis, or severe volume and/or salt depletion of any etiology. It may be advisable to eliminate the diuretic (except in heart failure patients), reduce the diuretic dose, or increase salt intake cautiously before initiating therapy with VASOTEC in patients at risk for excessive hypotension who are able to tolerate such adjustments. (See PRECAUTIONS, Drug Interactions and ADVERSE REACTIONS.) In patients at risk for excessive hypotension, therapy should be started under very close medical supervision and such patients should be followed closely for the first two weeks of treatment and whenever the dose of enalapril and/or diuretic is increased. Similar considerations may apply to patients with ischemic heart disease or cardiovascular disease in whom an excessive fall in blood pressure could result in a myocardial infarction or cerebrovascular accident. If excessive hypotension occurs, the patient should be placed in supine position and, if necessary, receive an intravenous infusion of normal saline. A transient hypotensive response is not a contraindication to further doses of VASOTEC which usually can be given without difficulty once the blood pressure has stabilized. If symptomatic hypotension develops, a dose reduction or discontinuation of VASOTEC or concomitant diuretic may be necessary.

Neutropenia/Agranulocytosis. Another ACE inhibitor, captopril, has been shown to cause agranulocytosis and bone marrow depression, rarely in uncomplicated patients but more frequently in patients with renal impairment, especially if they also have a collagen vascular disease. Available data from clinical trials of enalapril are insufficient to show that enalapril does not cause agranulocytosis at similar rates. Foreign marketing experience has revealed several cases of neutropenia or agranulocytosis in which a causal relationship to enalapril cannot be excluded. Periodic monitoring of white blood cell counts in patients with collagen vascular disease and renal disease should be considered.

Precautions: **General Impaired Renal Function** As a consequence of inhibiting the renin-angiotensin-aldosterone system, changes in renal function may be anticipated in susceptible individuals. In patients with severe heart failure whose renal function may depend on the activity of the renin-angiotensin-aldosterone system, treatment with ACE inhibitors, including VASOTEC, may be associated with oliguria and/or progressive azotemia and rarely with acute renal failure and/or death.

In clinical studies in hypertensive patients with unilateral or bilateral renal artery stenosis, increases in blood urea nitrogen and serum creatinine were observed in 20% of patients. These increases were almost always reversible upon discontinuation of enalapril and/or diuretic therapy. In such patients, renal function should be monitored during the first few weeks of therapy.

Some patients with hypertension or heart failure with no apparent preexisting renal vascular disease have developed increases in blood urea and serum creatinine, usually minor and transient, especially when VASOTEC has been given concomitantly with a diuretic. This is more likely to occur in patients with preexisting renal impairment. Dosage reduction and/or discontinuation of the diuretic and/or VASOTEC may be required.

Evaluation of patients with hypertension or heart failure should always include assessment of renal function. (See DOSAGE AND ADMINISTRATION.)

Hyperkalemia Elevated serum potassium (> 5.7 mEq/L) was observed in approximately 1% of hypertensive patients in clinical trials. In most cases these were isolated values which resolved despite continued therapy. Hyperkalemia was a cause of discontinuation of therapy in 0.28% of hypertensive patients. In clinical trials in heart failure, hyperkalemia was observed in 3.8% of patients, but was not a cause for discontinuation.

Risk factors for the development of hyperkalemia include renal insufficiency, diabetes mellitus, and the concomitant use of potassium-sparing diuretics, potassium supplements, and/or potassium-containing salt substitutes, which should be used cautiously, if at all, with VASOTEC. (See Drug Interactions.)

Surgery/Anesthesia In patients undergoing major surgery or during anesthesia with agents that produce hypotension, enalapril may block angiotensin II formation secondary to compensatory renin release. If hypotension occurs and is considered to be due to this mechanism, it can be corrected by volume expansion.

Information for Patients

Angioedema. Angioedema, including laryngeal edema, may occur especially following the first dose of enalapril. Patients should be so advised and told to report immediately any signs or symptoms suggesting angioedema (swelling of face, extremities, eyes, lips, tongue, difficulty in swallowing or breathing) and to take no more drug until they have consulted with the prescribing physician.

Hypotension Patients should be cautioned to report lightheadedness especially during the first few days of therapy. If actual syncope occurs, the patients should be told to discontinue the drug until they have consulted with the prescribing physician.

All patients should be cautioned that excessive perspiration and dehydration may lead to an excessive fall in blood pressure because of reduction in fluid volume. Other causes of volume depletion such as vomiting or diarrhea may also lead to a fall in blood pressure; patients should be advised to consult with the physician.

Hyperkalemia Patients should be told not to use salt substitutes containing potassium without consulting their physician.

Neutropenia Patients should be told to report promptly any indication of infection (e.g., sore throat, fever) which may be a sign of neutropenia.

NOTE As with many other drugs, clinical advice to patients being treated with enalapril is warranted. This information is intended to aid in the safe and effective use of this medication. It is not a disclosure of all possible adverse or intended effects.

Drug Interactions

Hypotension. Patients on Diuretic Therapy Patients on diuretics and especially those in whom diuretic therapy was recently instituted may occasionally experience an excessive reduction of blood pressure after initiation of therapy with enalapril. The possibility of hypotensive effects with enalapril can be minimized by either discontinuing the diuretic or increasing the salt intake prior to initiation of treatment with enalapril. If it is necessary to continue the diuretic, provide close medical supervision after the initial dose for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and DOSAGE AND ADMINISTRATION.)

Agents Causing Renin Release: The antihypertensive effect of VASOTEC is augmented by antihypertensive agents that cause renin release (e.g., diuretics).

Other Cardiovascular Agents VASOTEC has been used concomitantly with beta-adrenergic-blocking agents, methyl-dopa, nitrates, calcium-blocking agents, hydralazine, prazosin, and digoxin without evidence of clinically significant adverse interactions.

Agents Increasing Serum Potassium: VASOTEC attenuates potassium loss caused by thiazide-type diuretics. Potassium-sparing diuretics (e.g., spironolactone, triamterene, or amiloride), potassium supplements, or potassium-containing salt substitutes may lead to significant increases in serum potassium. Therefore, if concomitant use of these agents is indicated because of demonstrated hypokalemia, they should be used with caution and with frequent monitoring of serum potassium. Potassium-sparing agents should generally not be used in patients with heart failure receiving VASOTEC.

Lithium A few cases of lithium toxicity have been reported in patients receiving concomitant VASOTEC and lithium and were reversible upon discontinuation of both drugs. Although a causal relationship has not been established, it is recommended that caution be exercised when lithium is used concomitantly with VASOTEC and serum lithium levels should be monitored frequently.

Pregnancy—Category C. There was no fetotoxicity or teratogenicity in rats treated with up to 200 mg/kg/day of enalapril (333 times the maximum human dose). Fetotoxicity, expressed as a decrease in average fetal weight, occurred in rats given 1200 mg/kg/day of enalapril but did not occur when these animals were supplemented with saline. Enalapril was not teratogenic in rabbits. However, maternal and fetal toxicity occurred in some rabbits at doses of 1 mg/kg/day or more. Saline supplementation prevented the maternal and fetal toxicity seen at doses of 3 and 10 mg/kg/day, but not at 30 mg/kg/day (50 times the maximum human dose).

Radioactivity was found to cross the placenta following administration of labeled enalapril to pregnant hamsters.

There are no adequate and well-controlled studies in pregnant women. VASOTEC® (Enalapril Maleate, MSD) should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: Milk in lactating rats contains radioactivity following administration of 14 C enalapril maleate. It is not known whether this drug is secreted in human milk. Because many drugs are secreted in human milk, caution should be exercised when VASOTEC is given to a nursing mother.

Pediatric Use: Safety and effectiveness in children have not been established.

Adverse Reactions: VASOTEC has been evaluated for safety in more than 10,000 patients, including over 1000 patients treated for one year or more. VASOTEC has been found to be generally well tolerated in controlled clinical trials involving 2981 patients.

Hypertension The most frequent clinical adverse experiences in controlled trials were: headache (5.2%), dizziness (4.3%), and fatigue (3%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in controlled clinical trials were: diarrhea (1.4%), nausea (1.4%), rash (1.4%), cough (1.3%), orthostatic effects (1.2%), and asthenia (1.1%).

Heart Failure The most frequent clinical adverse experiences in both controlled and uncontrolled trials were: dizziness (7.9%), hypotension (6.7%), orthostatic effects (2.2%), syncope (2.2%), cough (2.2%), chest pain (2.1%), and diarrhea (2.1%).

Other adverse experiences occurring in greater than 1% of patients treated with VASOTEC in both controlled and uncontrolled clinical trials were: fatigue (1.8%), headache (1.8%), abdominal pain (1.6%), asthenia (1.6%), orthostatic hypotension (1.6%), vertigo (1.6%), angina pectoris (1.5%), nausea (1.3%), vomiting (1.3%), bronchitis (1.3%), dyspnea (1.3%), urinary tract infection (1.3%), rash (1.3%), and myocardial infarction (1.2%).

Other serious clinical adverse experiences occurring since the drug was marketed or adverse experiences occurring in 0.5% to 1% of patients with hypertension or heart failure in clinical trials in order of decreasing severity within each category:

Cardiovascular: Myocardial infarction or cerebrovascular accident possibly secondary to excessive hypotension in high-risk patients (see WARNINGS, Hypotension), cardiac arrest, pulmonary embolism and infarction, rhythm disturbances, atrial fibrillation, palpitation.

Digestive: Ileus, pancreatitis, hepatitis or cholestatic jaundice, melena, anorexia, dyspepsia, constipation, glossitis.

Nervous/Psychiatric: Depression, confusion, ataxia, somnolence, insomnia, nervousness, paresthesia.

Urogenital: Renal failure, oliguria, renal dysfunction (see PRECAUTIONS and DOSAGE AND ADMINISTRATION), prostatic hypertrophy.

Respiratory: Bronchospasm, rhinorrhea, asthma, upper respiratory infection.

Skin: Herpes zoster, pruritus, alopecia, flushing, photosensitivity.

Other: Muscle cramps, hyperhidrosis, impotence, blurred vision, taste alteration, tinnitus.

A symptom complex has been reported which may include fever, myalgia, and arthralgia, an elevated erythrocyte sedimentation rate may be present. Rash or other dermatologic manifestations may occur. These symptoms have disappeared after discontinuation of therapy.

Angioedema Angioedema has been reported in patients receiving VASOTEC (0.2%). Angioedema associated with laryngeal edema may be fatal. If angioedema of the face, extremities, lips, tongue, glottis, and/or larynx occurs, treatment with VASOTEC should be discontinued and appropriate therapy instituted immediately. (See WARNINGS.)

Hypotension In the hypertensive patients, hypotension occurred in 0.9% and syncope occurred in 0.5% of patients following the initial dose or during extended therapy. Hypotension or syncope was a cause for discontinuation of therapy in 0.1% of hypertensive patients. In heart failure patients, hypotension occurred in 6.7% and syncope occurred in 2.2% of patients. Hypotension or syncope was a cause for discontinuation of therapy in 1.9% of patients with heart failure. (See WARNINGS.)

Clinical Laboratory Test Findings

Serum Electrolytes: Hyperkalemia (see PRECAUTIONS), hyponatremia.

Creatinine, Blood Urea Nitrogen In controlled clinical trials, minor increases in blood urea nitrogen and serum creatinine, reversible upon discontinuation of therapy, were observed in about 0.2% of patients with essential hypertension treated with VASOTEC alone. Increases are more likely to occur in patients receiving concomitant diuretics or in patients with renal artery stenosis. (See PRECAUTIONS.) In patients with heart failure who were also receiving diuretics with or without digitalis, increases in blood urea nitrogen or serum creatinine, usually reversible upon discontinuation of VASOTEC and/or other concomitant diuretic therapy, were observed in about 1.1% of patients. Increases in blood urea nitrogen or creatinine were a cause for discontinuation in 1.2% of patients.

Hemoglobin and Hematocrit Small decreases in hemoglobin and hematocrit (mean decreases of approximately 0.3 g% and 1.0 vol %, respectively) occur frequently in either hypertension or heart failure patients treated with VASOTEC but are rarely of clinical importance unless another cause of anemia coexists. In clinical trials, less than 0.1% of patients discontinued therapy due to anemia.

Other (Causal Relationship Unknown) In marketing experience, rare cases of neutropenia, thrombocytopenia, and bone marrow depression have been reported.

Liver Function Tests: Elevations of liver enzymes and/or serum bilirubin have occurred.

Dosage and Administration: **Hypertension** In patients who are currently being treated with a diuretic, symptomatic hypotension occasionally may occur following the initial dose of VASOTEC. The diuretic should, if possible, be discontinued two to three days before beginning therapy with VASOTEC to reduce the likelihood of hypotension. (See WARNINGS.) If the patient's blood pressure is not controlled with VASOTEC alone, diuretic therapy may be resumed. If the diuretic cannot be discontinued, an initial dose of 2.5 mg should be used under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, Drug Interactions.)

The recommended initial dose in patients not on diuretics is 5 mg once a day. Dosage should be adjusted according to blood pressure response. The usual dosage range is 10 to 40 mg per day administered in a single dose or in two divided doses. In some patients treated once daily, the antihypertensive effect may diminish toward the end of the dosing interval. In such patients, an increase in dosage or twice-daily administration should be considered. If blood pressure is not controlled with VASOTEC alone, a diuretic may be added.

Concomitant administration of VASOTEC with potassium supplements, potassium salt substitutes, or potassium-sparing diuretics may lead to increases of serum potassium. (See PRECAUTIONS.)

Dosage Adjustment in Hypertensive Patients with Renal Impairment The usual dose of enalapril is recommended for patients with a creatinine clearance > 30 mL/min (serum creatinine of up to approximately 3 mg/dL). For patients with creatinine clearance ≤ 30 mL/min (serum creatinine ≥ 3 mg/dL), the first dose is 2.5 mg once daily. The dosage may be titrated upward until blood pressure is controlled or to a maximum of 40 mg daily.

Heart Failure VASOTEC is indicated as adjunctive therapy with diuretics and digitalis. The recommended starting dose is 2.5 mg once or twice daily. After the initial dose of VASOTEC, the patient should be observed under medical supervision for at least two hours and until blood pressure has stabilized for at least an additional hour. (See WARNINGS and PRECAUTIONS, Drug Interactions.) If possible, the dose of the diuretic should be reduced, which may diminish the likelihood of hypotension. The appearance of hypotension after the initial dose of VASOTEC does not preclude subsequent careful dose titration with the drug, following effective management of the hypotension. The usual therapeutic dosing range for the treatment of heart failure is 5 to 20 mg daily given in two divided doses. The maximum daily dose is 40 mg. Once-daily dosing has been effective in a controlled study, but nearly all patients in this study were given 40 mg, the maximum recommended daily dose, and there has been much more experience with twice-daily dosing. In addition, in a placebo-controlled study which demonstrated reduced mortality in patients with severe heart failure (NYHA Class IV), patients were treated with 2.5 to 40 mg per day of VASOTEC, almost always administered in two divided doses. (See CLINICAL PHARMACOLOGY, Pharmacodynamics and Clinical Effects.) Dosage may be adjusted depending upon clinical or hemodynamic response. (See WARNINGS.)

Dosage Adjustment in Heart Failure Patients with Renal Impairment or Hyponatremia In heart failure patients with hyponatremia (serum sodium < 130 mEq/L) or with serum creatinine > 1.6 mg/dL, therapy should be initiated at 2.5 mg daily under close medical supervision. (See DOSAGE AND ADMINISTRATION, Heart Failure, WARNINGS, and PRECAUTIONS, Drug Interactions.) The dose may be increased to 2.5 mg b.i.d., then 5 mg b.i.d. and higher as needed, usually at intervals of four days or more, if at the time of dosage adjustment there is not excessive hypotension or significant deterioration of renal function. The maximum daily dose is 40 mg.

For more detailed information, consult your MSD representative or see Prescribing Information. Merck Sharp & Dohme, Division of Merck & Co., Inc., West Point, PA 19386.

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